

Congratulations on Your **Uniden®** Purchase!



Your UBC396T will operate here in Australia/New Zealand, however please take note of these important differences.

1. Frequency Bands List (Page 10) and Frequency range specifications (Page 121-122) for Australia/New Zealand.

Frequency (MHz)			
Lower Edge	Upper Edge	Modulation	Step (kHz)
25.0000	27.9950	AM	5.0
28.0000	69.9900	FM	10.0
70.0000	87.9500	FM	12.5
88.0000	107.9000	WFM	100.0
108.0000	136.9750	AM	12.5
137.0000	147.9950	FM	5.0
148.0000	173.9875	FM	12.5
174.0000	224.9800	WFM	100.0
225.0000	399.9500	AM	50.0
400.0000	512.0000	NFM	6.25
764.0000	775.9875	NFM	12.5
794.0000	805.9875	NFM	12.5
806.0000	956.0000	NFM	12.5
1240.0000	1300.0000	NFM	25.0

FEATURE CHANGES

2. For Australia/New Zealand, there are 9 Service Searches as follows;

Page 11

9 Service Searches - frequencies are preset in separate Police, Marine, Railroad, Air, CB Radio, UHF CB Radio, Racing, TV Broadcast, and FM Broadcast searches, to make it easy to search and scan for specific transmissions.

Page 91

The following search bands appear.

- Police
- UHF CB Radio
- Marine
- Railroad
- Air
- CB Radio
- Racing
- TV Broadcast
- FM Broadcast



Police, railroad and AM CB preset frequencies in the service bank are valid for Australia ONLY. Aircraft, Marine, UHF CB, racing, TV Broadcast and FM Broadcast preset frequencies are valid for both Australia and New Zealand.

3. Weather (WX) and SAME features are not available in Australia/New Zealand.

Page 13-14

Weather

Weather Search –
SAME Weather Alert –
WX Priority –

Page 110-112

Using Weather Alert (SAME)

Searching For a Weather Broadcast
Turning Weather Alert On/Off
Programming a SAME Group
Setting WX Alert Priority

4. The Fire Tone-Out feature is not used in Australia/New Zealand.

Page 12 Fire Tone-Out Standby –

Page 113-114

Using Tone Out

5. The Preprogrammed Systems are not applicable for Australia/New Zealand.

Page 11 Preprogrammed Systems -

Page 140-145

Preprogrammed Systems

6. Please use these sites to find frequencies.

Page 29-30

Where To Get More Information
Information On The Internet

- For Australia visit www.uniden.com.au , select any scanner product then click on “Scanner Frequency”.
- For New Zealand visit www.nzscanners.org.nz

7. Warranty for Australia/New Zealand

One Year Limited Warranty

IMPORTANT: Evidence of the original purchase is required for warranty service.

WARRANTOR: Uniden New Zealand Limited. Uniden Australia Pty Ltd. ABN 58 001 865 498

ELEMENTS OF WARRANTY: Uniden warrants to the original retail owner for the duration of this warranty its UBCD396T (hereinafter referred to as the Product), to be free from defects in materials and craftsmanship with only the limitations or exclusions set out below.

WARRANTY DURATION: This warranty to the original retail owner only is only valid in the original country of purchase and shall be of no further effect 1 year after the date of original retail sale. This warranty will be deemed invalid if the Product is: (A) Damaged or not maintained as reasonable and necessary, (B) Modified, altered or used as part of any conversion kits, subassemblies, or any configurations not sold by Uniden, (C) Improperly installed, (D) Repaired by someone other than an authorized Uniden Repair Agent for a defect or malfunction covered by this warranty, (E) Used in conjunction with any equipment or parts or as a part of a system not manufactured by Uniden. (F) Only available in the original country of sale.

PARTS COVERED: This warranty covers for one (1) year, the UBCD396T Scanner only. All accessories (AC adaptor, batteries etc.) are covered for 90 days only.

STATEMENT OF REMEDY: In the event that the Product does not conform to this warranty at any time while this warranty is in effect, the warrantor, at its discretion, will repair the defect or replace the Product and return it to you without charge for parts and service. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS GUARANTEE IS IN ADDITION TO AND DOES NOT IN ANY WAY AFFECT YOUR RIGHTS UNDER THE CONSUMER GUARANTEE ACT.

PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY: in the event that the Product does not conform to this warranty, the Product should be shipped or delivered, freight prepaid, with evidence of original purchase (e.g. a copy of the sales docket) to the warrantor at:

UNIDEN AUSTRALIA PTY LIMITED
SERVICE DIVISION
345 Princes Highway,
Rockdale,
NSW 2216,
AUSTRALIA
Fax: (02) 9599 3278
www.uniden.com.au

UNIDEN NEW ZEALAND LIMITED
SERVICE DIVISION
150 Harris Road,
East Tamaki,
Auckland,
NEW ZEALAND
Fax: (09) 274 4253
www.uniden.co.nz

The Uniden logo is displayed in white text on a dark gray rectangular background. The logo consists of the word "Uniden" followed by a registered trademark symbol (®).

Uniden®

BCD396T

OWNER'S

MANUAL

OWNER'S MANUAL

Precautions

Before you use this scanner, please read and observe the following.

IMPORTANT!

This scanning radio has been manufactured so that it will not tune to the radio frequencies assigned by the FCC for cellular telephone usage. The Electronic Communications Privacy Act of 1986, as amended, makes it a federal crime to intentionally intercept cellular or cordless telephone transmissions or to market this radio when altered to receive them. The installation, possession, or use of this scanning radio in a motor vehicle may be prohibited, regulated, or require a permit in certain states, cities, and/or local jurisdictions. Your local law enforcement officials should be able to provide you with information regarding the laws in your community.

Changes or modifications to this product not expressly approved by Uniden, or operation of this product in any way other than as detailed by this Operating Guide, could void your authority to operate this product.

EARPHONE WARNING!

Be sure to use only a monaural earphone with this scanner. You can also use an optional 32 Ω stereo headset. Use of an incorrect earphone or stereo headset might be potentially hazardous to your hearing. The output of the phone jack is monaural, but you will hear it in both headphones of a stereo headset.

Set the volume to a comfortable audio level coming from the speaker before plugging in the monaural earphone or a stereo headset of the proper impedance (32 Ω). Otherwise, you might experience some discomfort or possible hearing damage if the volume suddenly becomes too loud because of the volume control or squelch control setting. This might be particularly true of the type of earphone that is placed in the ear canal.

Precautions

WARNING!

Uniden **does not** represent this unit to be waterproof. To reduce the risk of fire or electrical shock, **do not** expose this unit to rain or moisture.

Astro®, DPL®, Digital Private Line®, Motorola®, PL®, PRIVACY PLUS®, Private Line®, SMARTNET®, and SMARTZONE® are registered trademarks of Motorola, Inc.

LTR® is a registered trademark of E.F. Johnson Co.


EDACS® is a registered trademark of M/A-COM Private Radio Systems Inc.

Uniden® and Bearcat® are registered trademarks of Uniden America Corporation.

TrunkTracker™, Trunk Tracking™, and Close Call™ are proprietary trademarks of Uniden America Corporation.

Other trademarks used throughout this manual are the property of their respective holders.

Important: If you use the supplied AC adapter to power the scanner but have not installed batteries in the scanner, never turn the scanner off by disconnecting the AC adapter or unplugging it from the AC outlet. This might corrupt the scanner's memory.

Always use  to turn the scanner off before disconnecting AC power.

Precautions

Contents

The FCC Wants You to Know	8
Scanning Legally	8
Introduction	10
Feature Highlights	11
About This Manual	16
Using the Multifunction Scroll Control	16
Entering Text	17
How the Scanner's Controls Are Represented in This Manual	17
Understanding Scanning	19
Understanding the Scanner's Memory	19
What is Scanning?	19
What is Searching?	20
What is CTCSS/DCS?	20
Conventional Scanning	22
Simplex Operation	23
Repeater Operation	23
What is Trunk Tracking?	23
Trunked Scanning	24
Types of Trunking Systems	25
Motorola Trunking	25
EDACS Trunking	27
LTR Trunking	28
I-Call (Motorola/EDACS)	29
Where To Get More Information	29
Information On The Internet	29
Included With Your Scanner	31
Setting Up Your Scanner	32
Using Internal Batteries	32
Using Rechargeable Batteries	33
Removing the Display Sticker	34
Using AC Power	34
Connecting the Antenna	35
Connecting an Optional Antenna	35
Connecting an Earphone/Headphone	35
Connecting an Extension Speaker	35
Attaching the Belt Clip	36
Attaching the Wrist Strap	36
A Look At The Keypad	36
A Look At The Display	39
Using Menu	41
Using Func	41
Basic Operation	42
Turning On the Scanner and Setting the Squelch	42
Scanning Systems	43
Preprogrammed System Tips	43
Selecting Systems to Scan	44
Selecting System Channel Groups	45
Locking/Unlocking Systems	45
Locking/Unlocking Channels	45
ID Scan/ID Search Mode	46
Temporarily Holding On a System	46
Holding On a Channel	46
Quickly Storing an ID During ID Search	47
Quick-Storing Channels or Talk Group ID's	47
Quickly Recalling Channels	48
Monitoring Trunking Activity	48
Toggling Channel Alpha Tags	48
Using the Menu	49
Programming Systems Menu	51

Contents

Other Settings	53
Displaying System Information	53
Viewing Memory Used	53
Viewing the Firmware Version	53
Adjusting the Key Beep	53
Locking/Unlocking the Keypad and Scroll	53
Turning Power Save On or Off	54
Priority Scan	54
Using the Backlight	54
Setting the Audio AGC	55
Adjusting the Display Contrast	55
Initializing the Scanner's Memory	56
Connecting Your Scanner to a Personal Computer	56
Using the Cloning Options	57
Wired Cloning	57
On-Air Cloning	58
Programming Radio Systems	60
Programming Conventional Systems	61
Entering/Editing Conventional Channel Groups	61
Entering/Editing Conventional Channels	62
Programming Motorola Systems	63
Setting System Frequencies	64
Setting Modulation	65
Setting Attenuation	65
Entering/Editing Motorola Channel Groups	66
Entering/Editing Motorola Channels	67
Programming EDACS Systems	67
Setting System Frequencies	68
Entering/Editing EDACS Channel Groups	69
Entering/Editing EDACS Channels	69
Programming LTR Systems	70
Setting System Frequencies	71
Entering/Editing LTR Channel Groups	71
Entering/Editing LTR Channels/Talkgroups	72
Programming/Editing Optional Settings	72
System-Level Settings	74
Editing the System Name	74
Editing the System Quick Key	75
Setting System Lockout	75
Setting the System Hold Time	76
Setting the Channel Delay Time	76
Setting ID Scan/Search (Trunked Systems Only)	77
Editing the Fleet Map (Motorola Systems Only)	77
Setting the Motorola Status Bit (Motorola Systems Only)	78
Setting the End Code Operation (Motorola Systems Only)	79
Setting I-Call (Motorola and EDACS Systems Only)	79
Setting Emergency Alert (Motorola and EDACS Systems Only)	80
Setting Control-Channel Only (Motorola Systems Only)	80
Reviewing Locked Out Frequencies	81
Clearing All Locked-Out IDs	81
Adjusting the P25 Level (Motorola and Conventional Systems Only)	81
Setting the EDACS ID Format (EDACS Systems Only)	82
Setting System Attenuation (Trunked Systems Only)	82
Deleting Systems	83
Copying Systems	83
Group-Level Settings	84
Entering/Editing the Group Name	84
Setting the Group Quick Key	85
Setting Group Lockout	85
Deleting Groups	85

Contents

Channel-Level Settings.....	86
Editing the Channel Name.....	86
Editing Frequencies (Conventional Channels Only)	87
Setting Channel Priority (Conventional Channels Only)	87
Setting Channel Alert.....	88
Editing the Talk Group ID (Trunked Channels Only)	88
Setting CTCSS/DCS (Conventional Channels Only)	89
Setting the System Frequency Modulation	90
Setting Channel Attenuation (Conventional Channels Only)	90
Setting Channel Lockout	91
Deleting Channels	92
Copying/Pasting Channels	92
Searching and Storing	94
Service Search	94
Quick Search	95
CTCSS/DCS Search	95
Custom Search	96
Editing a Custom Search Range	97
Editing a Service Search	98
Auto Search and Store	99
Selecting a System	100
Storing a Conventional System	100
Optimizing P25 Performance	102
Storing a Trunked System	102
Using the Close Call Feature	103
Setting Close Call Options	104
Close Call Hits	106
Search and Close Call Options	107
Managing Locked-Out Frequencies	107
Unlocking All Frequencies	107
Reviewing Locked Out Frequencies	107
Searching for Subaudible Tones	107
Screening Out Broadcast Sources	108
Finding Repeater Output Frequencies	109
Setting the Maximum Auto Store Value	110
Setting the Modulation Type	110
Setting Attenuation	110
Setting Data Skip	111
Setting the Delay Time	112
Setting the Search Frequency Step	112
Using Weather Alert (SAME)	113
Searching For a Weather Broadcast	113
Turning Weather Alert On/Off	113
Programming a SAME Group	114
Setting WX Alert Priority	115
Using Tone-Out	116
Fire Tone-Out Introduction	116
Setting Tone-Out Standby	116
Setting Up Tone-Out	116
Care and Maintenance	119
General Use	119
Location	119
Cleaning	119
Repairs	120
Birdies	120
Troubleshooting	121

Contents

Specifications	125
Optional Accessories	128
Appendix	129
Preset Fleet Maps	129
User Defined Fleet Maps	131
Type I Programming Information	131
Size Code Restrictions	132
Planning	133
Collecting Information	133
Filling Out The Conventional System Worksheet	135
System Name and Quick Key	135
Group Name and Quick Key	135
Frequency-Alpha Tag-Priority-CTCSS/DCS	135
Filling Out The Motorola Worksheet	135
System Name and Quick Key	135
System Type	136
System Frequencies	136
Fleet Map (Type I or Type I/Type II Hybrid Only)	136
Band Plan (VHF or UHF Only)	137
Group Name and Quick Key	137
Talk Group ID-Alpha Tag-Alert	137
Filling Out the LTR and EDACS Worksheet	137
System Name and Quick Key	137
System Frequencies and LCN	138
Group Name and Quick Key	138
Talk Group ID-Alpha Tag-Alert	138
Conventional System Worksheet	139
Motorola System Worksheet	140
LTR/EDACS System Worksheet	142
Preprogrammed Systems	144
One-Year Limited Warranty	150

Contents

The FCC Wants You to Know

This scanner has been tested and found to comply with the limits for a scanning receiver, pursuant to Part 15 of the *FCC Rules*. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This scanner generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this scanner does cause harmful interference to radio or television reception, which can be determined by turning the scanner on and off, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the scanner and the receiver

This device complies with Part 15 of the *FCC Rules*. Operation is subject to the following two conditions:
1) This device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Scanning Legally

Your scanner covers frequencies used by many different groups, including police and fire departments, ambulance services, government agencies, private companies, amateur radio services, military operations, pager services, and wireline (telephone and telegraph) service providers. It is legal to listen to almost every transmission your scanner can receive. However, there are some transmissions that you should never intentionally listen to. These include:

The FCC Wants You to Know

-
-
- Telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
 - Pager transmissions
 - Any scrambled or encrypted transmissions

According to the Electronic Communications Privacy Act (ECPA), you are subject to fines and possible imprisonment for intentionally listening to, using, or divulging the contents of such a conversation unless you have the consent of a party to the conversation (unless such activity is otherwise illegal). This scanner has been designed to prevent the reception of cellular telephone transmissions and the decoding of scrambled transmissions. This is done to comply with the legal requirement that scanners be manufactured so they are not easy to modify to pick up these transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that are illegal to monitor. Modifying or tampering with your scanner's internal components or using it in a way other than as described in this manual could invalidate your warranty and void your FCC authorization to operate it.

In some areas, mobile and/or portable use of this scanner is unlawful or requires a permit. Check the laws in your area. It is also illegal in many areas (and a bad idea everywhere) to interfere with the duties of public safety officials by traveling to the scene of an incident without authorization.

A license is required to use this product in Canada.

The FCC Wants You to Know

Introduction

Your BCD396T scanner is a state-of-the-art scanner radio with TrunkTracker IV™ and automatic scanning capabilities. You can store frequencies such as police, fire/emergency, marine, air, amateur, and other communications into the scanner. You can carry it with you wherever you go. You can use the scanner's scroll control to quickly select channels and frequencies, and you can automatically program channels in a system using the AutoStore feature. Use your scanner to monitor:

- Analog and digital trunked public safety systems (unencrypted only) *
- Police and fire departments (including rescue and paramedics)
- NOAA weather transmissions
- Business/Industrial radio and utilities
- Marine and amateur (ham radio) bands
- Air band
- Railroad

Your scanner can monitor the following bands.

Frequency (MHz)			
Lower Edge	Upper Edge	Modulation	Step (kHz)
25.0000	27.9950	AM	5.0
28.0000	29.6800	NFM	20.0
29.7000	49.9900	NFM	10.0
50.0000	53.9800	NFM	20.0
54.0000	71.9500	WFM	50.0
72.0000	75.9950	FM	5.0
76.0000	87.9500	WFM	50.0
88.0000	107.9000	WFM	100.0
108.0000	136.9750	AM	25.0
137.0000	143.9875	NFM	12.5
144.0000	147.9950	NFM	5.0
148.0000	150.7875	NFM	12.5
150.8000	161.9950	NFM	5.0
162.0000	173.9875	NFM	12.5
174.0000	215.9500	WFM	50.0
216.0000	224.9800	NFM	20.0
225.0000	399.9500	AM	50.0
400.0000	512.0000	NFM	12.5
764.0000	775.9875	NFM	12.5
794.0000	805.9875	NFM	12.5
806.0000	823.9875	NFM	12.5
849.0125	868.9875	NFM	12.5
894.0125	956.0000	NFM	12.5
1240.0000	1300.0000	NFM	25.0

* Motorola® Astro®, SMARTNET®, SMARTZONE®, and PRIVACY PLUS®, M/A-COM Private Radio Systems Inc. EDACS® Wide, Narrow, and SCAT, and E.F. Johnson Co. LTR systems.

Introduction

Feature Highlights

General

Close Call™ RF Capture Technology - You can set the scanner so it detects and provides information about nearby radio transmissions. See “Using the Close Call Feature” on Page 103 for more information.

Dynamically Allocated Channel Memory - Your scanner's memory is organized so that it more closely matches how radio systems actually work, making it easier to program and use your scanner and determine how much memory you have used and how much you have left.

Preprogrammed Systems - Your scanner is preprogrammed with over 400 channels covering police, fire, and ambulance operations in the 25 most populated counties in the US, plus the most popular digital systems. A complete list of the scanner's preprogrammed systems is in “Preprogrammed Systems” on Page 144.

100 Quick Keys – You can set the scanner so you can quickly select systems and groups by using the keypad. This makes it easy to listen to or quickly lock out those systems or groups you don't want to scan.

12 Service Searches - frequencies are preset in separate Public Safety, News, HAM Radio, Marine, Railroad, Air, CB Radio, FRS/GMRS, Racing, TV Broadcast, FM Broadcast, and Special searches, to make it easy to search and scan for specific transmissions.

Lockout – You can lock out any system, group, frequency, or channel while scanning. If you lock out a system or group, any channels belonging to that system or group are also locked out.

You can lock out up to 200 frequencies. The scanner skips locked-out frequencies while using the Close Call feature or while searching.

CTCSS and DCS Squelch Modes – prevent interference from stations not using the mode you select.

Feature Highlights

Analog and Digital Audio AGC – Helps automatically balance the volume level between different radio systems.

Fire Tone-Out Standby – Lets you set the scanner to alert you if a two-tone sequential page is transmitted. You can set up to 10 settings (transmit frequency, tone frequencies) then select one for standby monitoring.

Broadcast Screen – Sets the scanner so it ignores Close Call™ or search hits on known broadcast frequencies including pager frequencies.

Custom Screen – Lets you input up to 10 frequency ranges that the scanner will ignore during Close Call™ or search operation.

Dropout Delay – You can set whether the scanner pauses at the end of a transmission to wait for a reply. You can set the delay time for each system you scan, and while searching and using the Close Call™ feature.

Attenuator – You can set the scanner's attenuator to reduce the input strength of strong signals by about 18 dB.

Repeater Reverse – You can set the scanner so it switches to the input frequency on a conventional repeater system.

Channel Alert – You can set the scanner so it alerts you when there is activity on any channel you specify.

Memory Check – Lets you see at a glance how much total memory is left.

Scan and Search Operation – Lets you include selected service searches or custom search ranges during normal scan operation.

Custom Alerts – For each alert in the scanner (such as channel alert, Close Call alert, emergency alert), you can select from 9 different tone patterns and also set the alert volume level independently from the main volume level.

Feature Highlights

Automatic Channel Step – Accepts frequencies on any valid channel step, even if it does not fall within the band plan's default step.

Frequency Step – Lets you select a frequency step (5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50 or 100 kHz) for manual mode and chain search mode. The scanner's auto step feature lets you set the scanner so it automatically chooses the correct step.

Quick Recall – Lets you quickly select a specific channel by choosing the system, group, and channel.

Scan/Search Delay – You can set the scanner so it remains on a frequency up to 5 seconds after the last transmission to wait for a possible reply.

Text Tagging – You can name each system, group, channel, talk group ID, custom search range, and SAME group, using up to 16 characters per name.

Unique Data Skip – Allows your scanner to skip unwanted data transmissions and reduces birdies.

Duplicate Frequency Alert – Alerts you if you try to enter a duplicate name or frequency already stored in a system.

Memory Backup – If power is lost or disconnected, the scanner retains the frequencies you programmed in its memory.

Note: The scanner's frequency coverage is not continuous and does not include the cellular telephone or UHF TV bands.

Trunk Tracking

Trunk Tracker IV™ Operation – Follows unencrypted conversations on analog Motorola, Motorola Astro 25 (APCO 25), EDACS, EDACS SCAT, and LTR trunked radio systems, including systems in VHF, UHF, 700 MHz, 800 MHz, and 900 MHz bands. The scanner can scan both conventional and trunked systems at the same time.

Feature Highlights

Control Channel Only Scanning – If the scanner is set to scan Motorola trunking frequencies, you can set it so it scans using only control channel data. You do not have to program voice channel frequencies into memory in this mode as long as all possible control channels are programmed.

Adaptive Digital Threshold – Automatically sets the digital decode threshold for APCO 25 systems.

Weather

Weather Search – Lets your scanner receive your local NOAA weather transmission.

SAME Weather Alert – Lets your scanner alert you when a SAME weather alert is transmitted on a NOAA weather channel. The scanner also displays the transmitted alert type. This helps you quickly find out about severe weather in your area and lets you avoid false alarms.

WX Priority – Lets your scanner alert you when a SAME weather priority alert is transmitted on a NOAA weather channel.

Search

Service Search – Lets you quickly select and search the scanner's preprogrammed frequencies.

Custom Search – Lets you program up to 10 custom search ranges. You can search any of these ranges simultaneously.

CTCSS/DCS Search – Lets the scanner search for CTCSS or DCS tones. You can identify up to 50 CTCSS tones and 104 DCS tones.

Quick Search – Lets you search from the currently-tuned frequency if you are searching a conventional system.

Auto Store

Frequency AutoStore – Automatically stores all active frequencies into the selected conventional system.

Feature Highlights

Talk Group ID AutoStore – Automatically stores all new talk group ID's into a channel group you select.

Priority

Priority Scan – Priority channels let you keep track of activity on your most important channel(s) while monitoring other channels for transmissions.

Priority Plus – You can set the scanner so it scans only the priority channels

Backlight and Power

Display and Keypad Backlight – Makes the display and keypad easy to see in dim light. You can adjust the back light so it turns on when you press a key, when squelch breaks during a transmission, or manually.

Low Battery Alert – The scanner alerts you if the batteries need to be recharged or replaced.

Battery Save – You can set the scanner so it reduces the amount of power it needs if there are no transmissions.

Key Controls

Key Lock – You can deactivate the scanner's keys to help prevent accidentally changing the scanner's programming.

PC Control and Cloning

PC Control – You can transfer programming data to and from your scanner and your personal computer, and control the scanner using a computer. This helps you find frequencies listed on the Internet and load them into the scanner. Free PC control and programming software will be available at <http://www.uniden.com>.

Clone Mode – You can clone all programmed data, including the contents of the scanner's memory, menu settings, and other parameters from one BCD396T scanner to another BCD396T scanner.

Feature Highlights

On-Air Cloning – You can clone all programmed data over the air from a PC to one or more BCD396T scanners.

About This Manual

The screen displays used in this manual are representations of what might appear when you use your scanner. Since what you see depends on the frequencies and user IDs for your area and the settings you select, you might notice some differences between what is in this manual and what appears on your scanner.

Using the Multifunction Scroll Control

The scroll control on top of the BCD396T lets you easily control channel selection, volume, and squelch, and how information appears on the display.

To adjust menu settings, change channels in Hold mode, and resume scanning: Simply rotate the scroll control.

To change the scanner's volume: Briefly press the scroll control once, then rotate it. **VOLUME LEVEL** and the current volume level appear on the display.

To adjust the squelch: While holding down **Func** on the left side of the scanner, briefly press the scroll control once then rotate it. **SQUELCH LEVEL** and the current squelch level appear on the display.

To change the display mode: While holding down **Func**, briefly press the scroll control twice. Extended receive information, usually applicable to digital scanning, appears on the display. Then briefly press the scroll control again to return to the original display.

Entering Text

To enter a letter, turn the scroll control until the character you want appears. To enter a number, press a number key. To enter a decimal point, press **•**.

Feature Highlights

To move the cursor to the left, press **</4**. To move the cursor to the right, press **6/>**.

To clear a character, press **•** twice. To clear all characters, press **•** three times.

To accept an entry, press down on the scroll control or press **E**.

How the Scanner's Controls Are Represented in This Manual

To help navigate the scanner's menus, the steps shown in this manual show the displays you see and the keys you press or control you operate to get a desired result.

This example shows you how to use the scanner's menu to edit an existing system name. It shows you the key to press (**Menu**) to select a menu option and the option you see (**Program System**) when you press **Menu**. It also instructs you to turn the scroll control (shown as **↻**) to view a series of choices then press the scroll control (shown as **↓**) to select a choice (**Edit Name**).

Menu → **Program System** → **↓**
↻ **Select the system** **↓**
→ **Edit Name** **↓**



Follow these steps to enter/edit the system name.

1. The first character of the system name is covered by a cursor. Rotate the scroll control to select the character you want.
2. Press **6/>** on the keypad to select the next character. The cursor moves to the next character. To move the cursor to a previous character, press **</4**.

Feature Highlights

-
-
-
-
3. Repeat Steps 1 and 2 until you have entered the system name. Then press down on the scroll control or press **E** to accept the setting.

Hints:

- Each system name can be up to 16 characters. Abbreviate as necessary to fit.
- The default system names include the following letter in the 16th position to indicate the system type:

M = Motorola

E = EDACS

L = LTR

C = Conventional

- Press **•** twice to delete the current character.
- Press **•** three times to clear the entire alpha tag.

To get the most from this manual, review the contents to become familiar with the basic functions available. If you are new to scanning or trunk tracking, be sure to read “Understanding Scanning” on Page 19 for a quick background on the technology. The first thing you’ll need to do is install batteries in the scanner. Then you need to connect the included antenna to the scanner. See “Setting Up Your Scanner” on Page 32 if you need any help doing this.

Feature Highlights

Understanding Scanning

This section provides you with background on how scanning works. You don't really need to know all of this to use your scanner, but some background knowledge will help you get the most from your BCD396T.

Understanding the Scanner's Memory

Your scanner's memory is organized in an architecture called *Dynamic Allocated Channel* memory. This type of memory is organized differently and more efficiently than the bank/channel architecture used by traditional scanners. Dynamic Allocated design matches how radio systems actually work much more closely, making it easier to program and use your scanner and determine how much memory you have used and how much you have left.

Instead of being organized into separate banks and channels, your scanner's memory is contained in a *pool*. You simply use as much memory as you need in the pool to store as many frequencies, talk group ID's, and alpha tags as you need. No memory space is wasted, and you can tell at a glance how much memory you have used and how much remains.

With a traditional scanner, when you program it to track a trunked system, you must first program the frequencies. Since you can only program one trunking system per bank in a traditional scanner, if there were (for example) 30 frequencies, the remaining channels in the bank are not used and therefore wasted. Also, since some trunked systems might have hundreds of talk groups, you would have had to enter those types of systems into multiple banks in order to monitor and track all the ID's.

What is Scanning?

Unlike standard AM or FM radio stations, most two-way communications do not transmit continuously. Your BCD396T scans programmed channels until it

Understanding Scanning

finds an active frequency, then stops on that frequency and remains on that channel as long as the transmission continues. When the transmission ends, the scanning cycle resumes until the scanner receives another transmission.

What is Searching?

The BCD396T can search each of its 12 bands and up to 10 bands together to find active frequencies. This is different from scanning because you are searching for frequencies that have not been programmed into the scanner. When you select frequency bands to search, the scanner searches for any active frequency within the lower and upper limits you specify. When the scanner finds an active frequency, it stops on that frequency as long as the transmission lasts. If you think the frequency is interesting, you can program it into the scanner's memory. If not, you can continue to search.

What is CTCSS/DCS?

Your scanner can monitor systems using a Continuous Tone Coded Squelch System (CTCSS) and Digital Coded Squelch (DCS) system, which allow squelch to open only when the tone you have programmed with a specific frequency is received along with a transmission.

CTCSS and DCS are subaudible tone signaling systems sometimes referred to as PL or DPL (Motorola's trademarked terms for Private Line and Digital Private Line respectively). CTCSS and DCS are used only for FM signals and are usually associated with both amateur and commercial two-way frequencies. These systems make use of a special subaudible tone that accompanies a transmitted signal.

CTCSS and DCS are used for many purposes. In many cases, CTCSS and DCS are used to restrict access to a commercial repeater, so that only those

Understanding Scanning

units which transmit the correct tone along with their signal can “talk” to the repeater.

CTCSS and DCS are also used in areas that receive interference where there are several stations with output frequencies close to each other. When this occurs, you might hear multiple communications on the same frequency. The stations might even interfere with each other to the point where it is impossible to clearly receive any of the stations. A scanner equipped with CTCSS and DCS (like your scanner) can code each received frequency with a specific CTCSS or DCS frequency. Then, when you receive multiple signals, you only hear the transmission with the CTCSS or DCS tone you programmed. If you do not receive the correct tone with a signal, the scanner’s squelch remains closed and you hear nothing.

You can search for the following CTCSS frequencies and DCS codes.

CTCSS Frequencies (Hz)

67.0	69.3	71.9	74.4	77.0	79.7
82.5	85.4	88.5	91.5	94.8	97.4
100.0	103.5	107.2	110.9	114.8	118.8
123.0	127.3	131.8	136.5	141.3	146.2
151.4	156.7	159.8	162.2	165.5	167.9
171.3	173.8	177.3	179.9	183.5	186.2
189.9	192.8	196.6	199.5	203.5	206.5
210.7	218.1	225.7	229.1	233.6	241.8
		250.3	254.1		

DCS Codes (Octal)

023	025	026	031	032	036	043	047
051	053	054	065	071	072	073	074
114	115	116	122	125	131	132	134
143	145	152	155	156	162	165	172

Understanding Scanning

174	205	212	223	225	226	243	244
245	246	251	252	255	261	263	265
266	271	274	306	311	315	325	331
332	343	346	351	356	364	365	371
411	412	413	423	431	432	445	446
452	454	455	462	464	465	466	503
506	516	523	526	532	546	565	606
612	624	627	631	632	654	662	664
703	712	723	731	732	734	743	754

Conventional Scanning

Conventional scanning is a relatively simple concept. Each group of users in a conventional system is assigned a single frequency (for simplex systems) or two frequencies (for repeater systems). Any time one of them transmits, their transmission always goes out on the same frequency. Up until the late 1980s, this was the primary way that radio systems operated.

Even today, there are many 2-way radio users who operate using a conventional system:

- Aircraft
- Amateur radio
- FRS/GMRS users
- Broadcast AM/FM/TV stations
- Many business radio users

When you want to store a conventional system, all you need to know is the frequencies they operate on. When you are scanning a conventional system, the scanner stops very briefly on each channel to see if there is activity. If there isn't, the scanner quickly moves to the next channel. If there is, then the scanner pauses on the transmission until it is over.

Understanding Scanning

Simplex Operation

Simplex systems use a single frequency for both transmit and receive. Most radios using this type of operation are limited to line-of-sight operation. This type of radio is frequently used at construction job sites, and with inexpensive consumer radios such as GMRS/FRS radios. The range is typically 1-8 miles, depending upon the terrain and many other factors.

Repeater Operation

Repeater systems use two frequencies: one transmits from the radio to a central repeater; the other transmits from the repeater to other radios in the system. With a repeater-based system, the repeater is located on top of a tall building or on a radio tower that provides great visibility to the area of operation. When a user transmits (on an input frequency), the signal is picked up by the repeater and retransmitted (on an output frequency). The user's radios always listen for activity on the output frequency and transmit on the input frequency. Since the repeater is located very high, there is a very large line of sight.

Typical repeater systems provide coverage out to about a 25-mile radius from the repeater location.

What is Trunk Tracking?

Your BCD396T is designed to track the following types of trunking systems.

- Motorola Astro (APCO 25) trunking systems.
- Motorola Type I, Type II, Type III hybrid, SMARTNET, and PRIVACYPLUS analog trunking systems, which are extensively used in 800 MHz communication systems.
- LTR trunking systems
- EDACS SCAT trunking systems
- EDACS trunking systems

Understanding Scanning

When tracking these types of systems, you might want to remember that your scanner can track more than one trunking system at a time and scan conventional and trunked systems at the same time.

Conventional scanning is a simple concept. You enter a frequency used by someone you want to monitor into your scanner's memory. For example, the police in your area might transmit on 460.500 MHz, the fire department on 154.445 MHz, the highway department on 37.900 MHz, etc. So when your scanner stops on a frequency, you usually know who it is, and more importantly, you can stop on a channel and listen to an entire conversation. This type of scanning is easy and fun.

However, as the demand for public communications has increased, many public radio users do not have enough frequencies to meet their needs, creating a serious problem. Trunking radio systems help solve this problem.

Trunked Scanning

While conventional scanning worked great while there were only a few groups wanting to use the frequencies, with the advent of smaller, lower-cost radios more and more agencies and businesses wanted to take advantage of the utility of 2-way radio. As a result, the bands that were used most became full, so new users were not able to take advantage of the technology as quickly as they wanted.

Trunking solved this frequency shortage by allowing multiple groups to use the same set of frequencies in a very efficient way. While each type of trunking system operates a little differently (see the next few sections), they all work on the same basic premise: even in a system with a lot of users, only a few users are ever transmitting at any one time.

Instead of being assigned a frequency, as with conventional systems, each group is assigned a talk group ID. A central computer controls the frequency

Understanding Scanning

each group operates on...and this frequency selection is made each time a user transmits. So, while on a conventional system queries, replies, and follow-ups are all on a single frequency, they could each be on completely different frequencies on a trunked system. This semi-random frequency assignment made monitoring such a system impossible prior to Uniden's invention of the TrunkTracker scanner.

Not only does your BCD396T scan channels like a conventional scanner, it actually follows the users of a trunked radio system. Once you know a talk group's ID, you won't miss any of the action.

If you are a new scanner enthusiast, you might want to read the first part of this manual and use your scanner in conventional mode before you begin trunk tracking. Understanding scanning fundamentals and terminology will make trunk tracking much easier. If you are already an experienced scanner operator, you might want to go to "Programming Motorola Systems" on Page 63, "Programming EDACS Systems" on Page 67, or "Programming LTR Systems" on Page 70 now.

Types of Trunking Systems

Trunking systems divide a few frequencies among many different users, but the way that each system does this is slightly different. This section describes some of the technical data behind Motorola, EDACS, and LTR trunked radio systems.

Motorola Trunking

While there are different types of Motorola trunking systems, they all use the same basic trunking method. The system consists of one control channel (or as many as 4 per system but only one is active at any one time), plus one or more voice channels (typically 10, 20, or 28 total channels). When a user presses Push To Talk (PTT) to transmit, their radio first sends their talk group information to the control channel.

Understanding Scanning

The computer then assigns that talk group to a specific voice channel and transmits that data over the control channel. All radios in that talk group switch over to the assigned voice channel and the user can begin speaking. This all typically takes place in about a second...the person transmitting hears a beep from their radio when the channel is assigned and then it is OK to start talking.

The systems in use are:

Motorola Type I – the radios send the radio ID, the fleet and subfleet talk group ID to the control channel each time they transmit. To program a Type I system, you need to know the system's *fleet map*. The most common fleet maps are included in "Preset Fleet Maps" on Page 129. You can also find fleet map resources on the web.

Motorola Type II – the radios only send the radio ID and radio channel code to the control channel. The central computer keeps a database of radio ID's and which talk group is assigned to which channel code for each radio, so with this system the user's radio sends only about $\frac{1}{3}$ the data as a Type I system with each transmission. Type II systems do not use Fleet-subfleet talk groups; instead they use a 5-digit ID for each talk group.

Type III Hybrid — these systems support a mix of both Type I and Type II users. Like Type I systems, you must know the system's fleet map to ensure proper tracking.

Motorola ASTRO 25 (APCO 25) – these radios are similar to Type II systems, but send only the radio ID and radio channel code to the control channel, transmitting voice in digital form.

Understanding Scanning

EDACS Trunking

EDACS trunking works in much the same way as Motorola trunking with a couple of major differences. In an EDACS system, each frequency used by the system is assigned a Logical Channel Number (LCN) so that less data needs to be transmitted by the control channel. Also, talk groups are assigned in an Agency-Fleet-Subfleet (AFS) hierarchy. Also, there is one variation of EDACS called SCAT that your BCD396T can monitor.

Logical Channel Numbers – each frequency used by the system is assigned an LCN. This information is programmed into each user radio. When a user presses PTT, their radio sends their AFS information to the control channel. The computer then assigns that talk group to a channel and sends the LCN so that all other radios in that talk group will switch to the correct channel. To program an EDACS system in your scanner, you will need to know both the frequencies used by the system and the LCN for each frequency.

Agency-Fleet-Subfleet – talk group ID's for EDACS systems are assigned in a way that makes it easy to see at a glance the affiliation of the user. Each radio is assigned a 2-digit agency identifier from 00 – 15. For example, 01 might be used by the police, 02 by the ambulance service, 03 by the fire department, and so on. Each agency is then subdivided up to 16 times to provide fleet identification, and then 8 more times to identify subfleets.

For example, the complete AFS for the Police Department West District's dispatch channel might be 01-062. 01 identifies the agency as the police department, 06 identifies the fleet as the West district, and 2 identifies the subfleet as the dispatch channel. While these assignments are somewhat arbitrary and vary from system to system, there are many resources on the web for finding the assignments for most systems. Because of the logical hierarchy of the AFS

Understanding Scanning

system, your BCD396T lets you assign wildcard ID's that let you, for example, use only one ID memory to identify all units in either an agency or a fleet.

EDACS SCAT – EDACS SCAT (Single Channel Autonomous Trunking) systems operate on a single channel and alternate control data with analog voice traffic. While your BCD396T cannot track ID's in this system, it can eliminate the control data so that all you hear is the voice transmissions when you monitor this type of system.

LTR Trunking

LTR (Logic Trunked Radio) systems are trunking systems used primarily by business or private communications service providers, such as taxicabs, delivery trucks, and repair services. These systems encode all control information as digital subaudible data that accompanies each transmission, so there is no separate control channel. Users on an LTR system are assigned to specific talk groups, which are identified by the radio as six digit numbers.

These numbers are in the form AHUUUU, where:

A = Area code (0 or 1)

H = Home repeater (01 through 20)

U = User ID (000 through 254)

When the scanner receives a transmission on a channel set to the LTR mode, it first decodes the LTR data included with the transmission. In the ID search mode, the scanner stops on the transmission and displays the talk group ID on the display. In the ID scan mode, the scanner only stops on the transmission if the LTR data matches a talk group ID that you have stored in the talk group ID list and have not locked out. LTR systems are frequently programmed so that each radio has a unique user ID.

Understanding Scanning

I-Call (Motorola/EDACS)

I-calls are direct unit-to-unit transmissions that are not heard by other system users. Your BCD396T can receive I-call transmissions. See "Setting I-Call (Motorola and EDACS Systems Only)" on Page 79 for more information about monitoring I-call transmissions.

Where To Get More Information

By itself, this manual only provides part of what you need to know to have fun scanning – how to program and use the scanner. Other sources provide additional information.

Information On The Internet

The Internet is a great source for current frequencies and information about scanning. Many web sites have lists of frequencies for your area. You can use a search engine to find and use them.

Make a list of the agencies you want to listen to, then look up the frequencies and systems used by those agencies. Here are a few useful sites:

- <http://www.scannermaster.com> * - frequency resources and home of Police Call.

You can also call them at 1 800 SCANNER (hours are from 10:00 a.m. to 5:00 p.m. Eastern Time Monday through Friday).

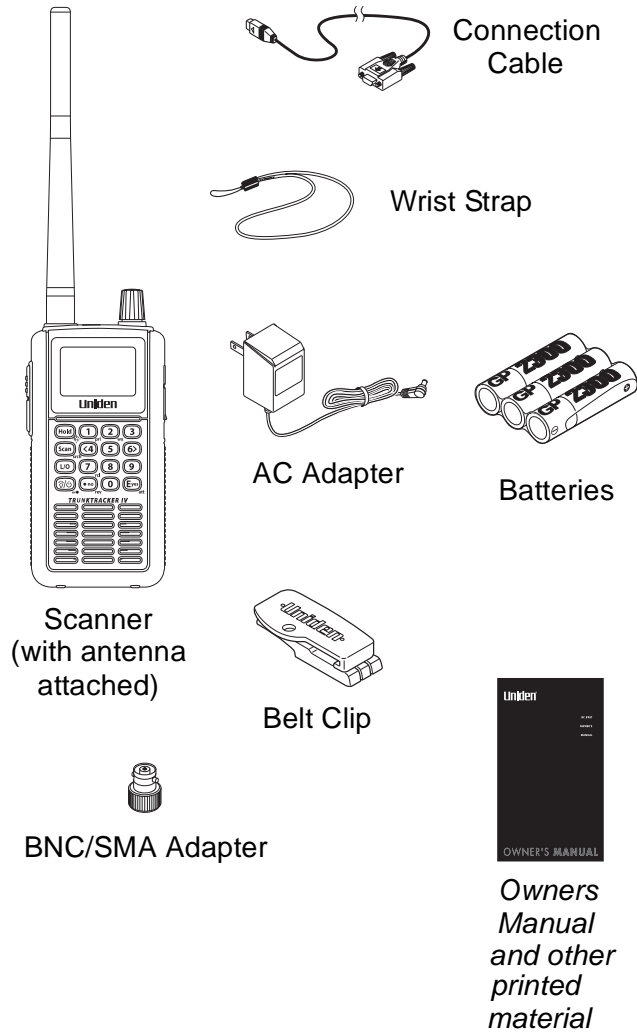
- <http://www.radioreference.com> * - the Internet's premier source for user-supported radio system information.
- <http://www.bearcat1.com> - frequency information from National Communications.
- <http://svartifoss2.fcc.gov/reports/index.cfm> * - conventional frequency information on file with the US Government

-
-
- <http://groups.yahoo.com/group/BCD396T> * - a group for people interested in discussing the BCD396T.

* - *These web sites are not affiliated with Uniden Corporation.*

For more information about Uniden and our products, visit <http://www.uniden.com>.

Included With Your Scanner



If any of these items are missing or damaged, immediately contact your place of purchase or Uniden Customer Service at: (800) 297-1023, 8:00 a.m. to 5:00 p.m., Central, Monday through Friday.

Included With Your Scanner

Setting Up Your Scanner

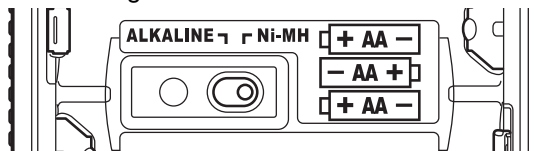
These guidelines will help you install and set up your new scanner:

- If your scanner receives interference or electrical noise, move the scanner or its antenna away from the source.
- To improve the scanner's reception, use an optional external antenna designed for multi-band coverage. (You can purchase this type of antenna at a local electronics store). If the optional antenna has no cable, use 50-75 Ω coaxial cable for lead-in. A mating plug might be necessary for the optional antennas.
- Use an optional mono earphone or mono headset with proper impedance (32 Ω) for private listening. Read the precautions on the inside front cover of this Owners Manual.
- Do not use the scanner in high-moisture environments such as the kitchen or bathroom.
- Avoid placing the scanner in direct sunlight or near heating elements or vents.

Using Internal Batteries

You can power your scanner using three alkaline or rechargeable AA batteries.

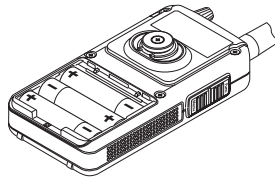
Before installing batteries, set the switch in the battery compartment to match the type of batteries you will use. Select **ALKALINE** for non-rechargeable battery types and **Ni-MH** for rechargeable battery types. See also "Using Rechargeable Batteries" on Page 33 when you use rechargeable batteries.



1. Remove the battery cover and set the battery switch.

Setting Up Your Scanner


-
-
2. Install 3 AA batteries, matching the polarity symbols (+ -).



WARNING!

Set **ALKALINE/Ni-MH** to **Ni-MH** for use only with rechargeable batteries. Never attempt to recharge non-rechargeable batteries. Non-rechargeable batteries can get hot and can even burst if you try to recharge them.

3. Replace the cover.

When  flashes and the scanner beeps every 15 seconds, replace the batteries.

Using Rechargeable Batteries

You can also use three rechargeable batteries to power your scanner. Before you use rechargeable batteries, you must charge them. The scanner has a built-in circuit that lets you recharge batteries while they are in the scanner. To charge the batteries, set **ALKALINE/Ni-MH** inside the battery compartment to **Ni-MH**, install the batteries in the scanner, and connect the supplied AC adapter to the scanner's DC 6V jack (see "Using AC Power" on Page 34).

WARNING!

Do not connect the AC adapter to the scanner if non-rechargeable batteries (such as alkaline batteries) are installed in the scanner and **ALKALINE/Ni-MH** is set to **Ni-MH**, or if you are unsure of the switch's position. Non-rechargeable batteries can get hot and can even burst if you try to recharge them. Before you use rechargeable batteries for the first time, charge them for 14 hours to bring them to a full charge. Discharged batteries take about 14 hours to fully recharge.

Setting Up Your Scanner

If an AC adapter is connected to the scanner, the scanner checks the condition of the installed batteries. If the scanner is turned off and the batteries require a full charge, **Pre-Charging** appears on the display. Then, **Normal Charging** appears as the batteries are recharged. When the batteries are fully charged, **Charge Complete** appears.

If no batteries are installed in the scanner, **No Battery** appears. If there is a problem with the installed batteries, **Battery Error** appears. If the installed batteries are Ni-MH batteries but **ALKALINE/Ni-MH** is set to **ALKALINE**, **Charge Off** appears and the scanner does not charge the batteries.

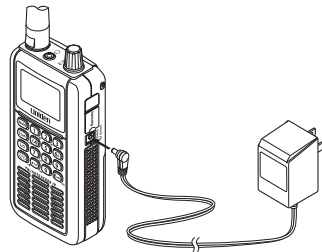
Removing the Display Sticker

Before you use the scanner, remove the protective plastic sticker over the display.

Using AC Power

You can power the scanner using the supplied 6V, 800 mA AC adapter.

To use the scanner on AC power, plug the adapter into **6V 800 mA** on the right side of the scanner, then plug the AC adapter into a standard AC outlet.



If rechargeable batteries are installed and **ALKALINE/Ni-MH** is set to **Ni-MH**, the adapter powers the scanner and recharges the installed batteries at the same time.

WARNING!

To prevent damage to Ni-MH batteries, never charge them in an area where the temperature is above 113°F (45°C) or below 32°F (0°C).

Setting Up Your Scanner

Connecting the Antenna

To attach the supplied flexible antenna to the connector on the top of your scanner, simply screw it onto the scanner's SMA connector.

Connecting an Optional Antenna

The scanner's SMA connector makes it easy to connect a variety of optional antennas, including an external mobile antenna or outdoor base station antenna.

Note: Always use 50- or 75-ohm, RG-58, or RG-8, coaxial cable and the supplied BNC/SMA adapter to connect an outdoor antenna. If the antenna is over 50 feet from the scanner, use RG-8 low-loss dielectric coaxial cable. Cable loss increases with higher frequency.

Connecting an Earphone/Headphone

For private listening, you can plug a $\frac{1}{8}$ -inch (3.5 mm) mini-plug earphone or headphones (not supplied) into the headphone jack on top of your scanner. This automatically disconnects the internal speaker. See "Earphone Warning" at the front of the manual for important information about using an earphone/headphone.

Connecting an Extension Speaker

In a noisy area, an optional amplified extension speaker, positioned in the right place, might provide more comfortable listening. Plug the speaker cable's $\frac{1}{8}$ -inch (3.5-mm) mini-plug into your scanner's jack.

WARNING!

Never connect anything other than an earphone or the recommended amplified extension speaker to the scanner's headphone jack. This might damage the scanner.

WARNING!

Never connect any part of the headphone jack to the antenna jack or connect the radio to an installation where the antenna and audio connection are grounded. This might damage the scanner.

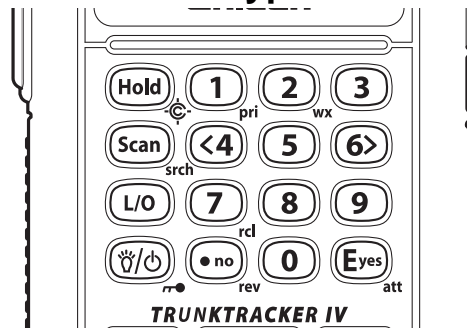
Attaching the Belt Clip

To make your scanner easier to carry when you are on the go, use the supplied belt clip. Rotate the scanner upside down to remove it from the clip.

Attaching the Wrist Strap

To keep your scanner safely close at hand, use the supplied wrist strap. Push the small loop on one end of the wrist strap through the lug on the right side of the scanner, then thread the other end of the wrist strap back through the small loop to secure it.

A Look At The Keypad










Your scanner's keys have various functions labeled on the key tops and below the keys.

To select the function labeled on a key, simply press the key. To select the function labeled below a key, hold down **Func** on the left side of the scanner then press the key. **F** appears on the display.

Setting Up Your Scanner

If your scanner's keys seem confusing at first, the following information should help you understand each key's function.

Key Name	Description
Hold/ 	<p>Hold – Holds the scan or the frequency search when pressed. Resumes the scan or the frequency search when pressed again.</p> <p>Func +  – Quickly turns the Close Call feature on or off (see “Setting Close Call Options” on Page 104).</p>
Scan/srch	<p>Scan – Scans the stored channels.</p> <p>Func + srch – Starts quick search or quickly accesses the search menu.</p>
L/O	<p>L/O – Lets you lock out a selected channel or skip a specified frequency.</p> <p>Press and hold for more than 2 seconds to unlock all channels in a system or all frequencies in a Search mode.</p> <p>Func + L/O – Press quickly to lock and unlock a selected system in Scan or Scan Hold mode and review search lockout frequencies in Search or Search Hold mode.</p>

Key Name	Description
 /  / 	<p> – Turns the display backlight on or off.</p> <p>Press and hold for more than 2 seconds to turn the scanner on or off. Press quickly to cancel a prompt.</p> <p>[Func] +  – Locks and unlocks the keypad.</p>
1-9, 0	<p>1-9, 0 – Enters a frequency, enters quick key numbers, and selects a custom search range in Custom Search mode.</p> <p>Selects systems by quick key in scan mode.</p> <p>[Func] + 1-9, 0 – Selects groups by quick key in scan mode.</p>
1/pri	<p>1 – Enters a 1.</p> <p>[Func] + pri – Selects the priority mode in scan hold mode.</p>
2/wx	<p>2 – Enters a 2.</p> <p>[Func] + wx – Selects the weather function in the menu in the Hold mode.</p>
</4	<p>4 – Enters a 4.</p> <p>[Func] + < – Moves the active character to the left while editing data.</p>
6/>	<p>6 – Enters a 6.</p> <p>[Func] + > – Moves the active character to the right while editing data.</p>

Setting Up Your Scanner

Key Name	Description
7/rcl	7 – Enters a 7. [Func] + rcl – Displays a series of prompts to quickly select a specific channel in the scan hold mode.
• no/rev	• – Enters a decimal point or dash in a frequency or talk group ID, enters or selects an extended 2-digit Quick Key, enters an “i” for I-Call input. At a prompt, answers “No.” [Func] + rev – Monitors the currently-tuned frequency’s reverse frequency.
E/yes/att	E – Press to select input and menu items, to quickly edit a channel in Scan Hold Mode, and store a frequency into memory in Scan Hold mode. At a prompt, answers “yes.” [Func] + att – Turns the scanner’s attenuator on or off for the current channel (for conventional systems) or system (for trunked systems).

A Look At The Display


The display has indicators that show the scanner's current operating status. The display information helps you understand how your scanner operates.


S_n: - appears with a number to show the currently-selected System Quick Key number. **n** appears to show the first digit of the Quick Key number. For example, if System Quick Key 75 is selected, **S7:** appears. The currently active system indicator flashes.

Setting Up Your Scanner

ATT - appears when the attenuation feature is turned on. See “Setting System Attenuation (Trunked Systems Only)” on Page 83.

PRI - appears when the priority feature is turned on (see “Priority Scan” on Page 54).

 - appears when you lock the keypad (see “Locking/Unlocking the Keypad and Scroll” on Page 53).


 - alerts you when the battery power gets low.

GRP - shows the currently activated group or selected group Quick Key number, appears with numbers (0-9). The currently active group indicator flashes.

AM/FM/NFM/WFM - appears to show the type of transmission.

L/O - appears when you manually select a channel you locked out or a skip frequency.

F - appears when you hold down **[Func]** to select a function.

 - appears when the scanner is set to a Close Call feature mode (see “Using the Close Call Feature” on Page 103).

SCAN - scrolls while the scanner is scanning.

DSKP - appears when data skip is turned on.

HOLD - appears while the scanner is set to scan or search hold mode.


P - appears if priority is turned on

ATT - appears if the attenuator is turned on.

SCR - appears when one or more broadcast screen bands are turned on.

REP - appears when repeater find is turned on.

P25 - appears when an APCO P25 digital voice transmission is being received.

 - appears to show signal strength (0 to 5)

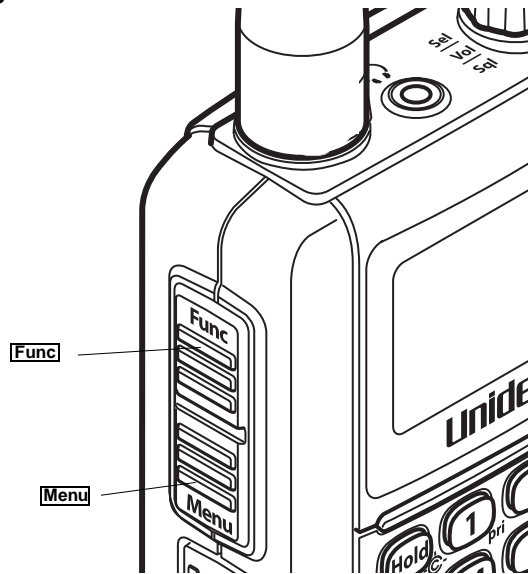
Setting Up Your Scanner

LNK - appears when data on a voice channel is being received.

DAT - appears when data on a control channel is being received.

ENC - appears when APCO P25 encrypted data is being received on a voice channel.

Using Menu



Press **Menu** on the left side of the scanner to enter the menu. See “Using the Menu” on Page 49 for more information about the scanner’s menu options.

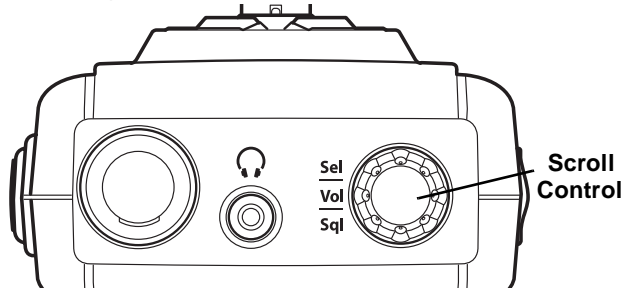
Using Func

To select the function labeled below a key on the front of the scanner, hold down **Func** on the left side of the scanner, then press that key. To hold on a system while scanning or temporarily stop on a channel while searching, press **Func**. To select a system in Scan or Scan Hold mode, hold down **Func** and rotate the scroll control.


Setting Up Your Scanner

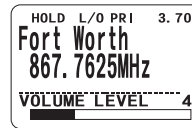
Basic Operation

Turning On the Scanner and Setting the Squelch



Note: Make sure the scanner's antenna is connected before you turn it on.

1. Press and hold  for about 2 seconds to turn on the scanner.
2. Briefly press the scroll control once. **VOLUME LEVEL** and a number appear on the display.



3. While **VOLUME LEVEL** appears, rotate the scroll control to set the volume to a comfortable listening level.

Note: If you do not press any key or turn the scroll control within about 10 seconds, **VOLUME LEVEL** disappears. If this happens, simply press the scroll control again.

4. While holding down **Func** on the left side of the scanner, briefly press the scroll control once. **SQUELCH LEVEL** and a number appear on the display.
5. While **SQUELCH LEVEL** appears, rotate the scroll control to set the squelch to the level you want.

Note: If you do not press any key or turn the scroll control within about 10 seconds, **SQUELCH LEVEL** disappears. If this happens, briefly press the scroll control while holding down **Func**.

Basic Operation

Scanning Systems

To begin scanning programmed systems, press **Scan**. The BCD396T scans all unlocked systems in all activated quick-key groups and any searches unlocked for search and scan.

Notes:

- If no systems are programmed, or all systems are locked out, an error message appears. Program a system or select a system to scan.
- When scanning multiple systems, the BCD396T scans systems according to the assigned quick key. Systems assigned to quick key 1 are scanned first, then 2, 3, 4, etc. Systems not assigned to a quick key are scanned last, then unlocked searches. Within a quick key, systems are scanned in the order they were assigned.
- Within a system, channels are scanned according to the assigned channel group, with the same priority as described above for systems.
- The BCD396T scans a system for the duration you set using the System Hold Time option (see “Setting the System Hold Time” on Page 76). For trunked systems, the scanner moves to the next system after the hold time expires, the current transmission ends, and the channel delay expires. Conventional systems operate similarly, but all unlocked channels are scanned at least one time regardless of the hold time setting.
- Each search range is searched for the amount of time you set using the “Set Hold Time” option. See “Setting the System Hold Time” on Page 76 for more information.

Preprogrammed System Tips

All systems preprogrammed into the scanner are assigned to a Quick Key. See “Preprogrammed Systems” on Page 144 for a list of preprogrammed systems and their Quick Key assignments.

Basic Operation

Notes:

- The systems preprogrammed into the scanner are located primarily in major metropolitan areas.
- You might hear transmissions on frequencies assigned to very distant stations. This will happen if a local system also uses the same frequency.

You can scan the preprogrammed systems more efficiently by preventing the BCD396T from trying to scan systems that are not in your area. To do this, refer to the quick key assignments listed in “Preprogrammed Systems” on Page 144, and enter the quick key for each distant system to turn them off.

To stop scanning a local preprogrammed system, you can:

- Lock out the system (see “Locking/Unlocking Systems” on Page 45)
- Reassign the system to another quick key so you can easily enable/disable it independently of other systems (see “Editing the System Quick Key” on Page 75)
- Delete the system (see “Deleting Systems” on Page 83)

Important! You cannot restore preprogrammed systems if you delete them.

Selecting Systems to Scan

To select systems to scan, press **Scan** then press the quick key assigned to the system or systems you want to scan. For quick keys 0-9, press the quick key's number. For quick keys 10-99, press • then press the quick key's 2-digit number. To stop scanning the system(s), press • (if the quick key is a 2-digit quick key) then the number button or buttons again.

The Sx: (system) indicators on the display show the systems that are currently selected.

Basic Operation

To select or lock out a system that is not assigned to a key, press and hold **[Func]** while you rotate the scroll control until the desired system is selected. Then, continue to hold **[Func]** and press **L/O** to either lock out or unlock the system.

Selecting System Channel Groups

Within a system, you can assign groups of channels to a group quick key (see “Setting the Group Quick Key” on Page 85).

Follow these steps to activate or deactivate a channel group within a system while scanning.

1. Press **[Func]** to hold on the system (or hold down **[Func]** then rotate the scroll control to select the system).
2. Continue to hold **[Func]** and press the number key corresponding to the channel group you want to activate or deactivate.

Locking/Unlocking Systems

Follow these steps to lock out a system so that it does not scan even if its quick key is selected.

1. While holding down **[Func]**, rotate the scroll control to select the system.
2. Continue to hold down **[Func]** and press **L/O** to lock out the system. *System Locked* appears.
3. Repeat Steps 1 and 2 to unlock a system you have previously locked. *System Unlocked* appears.

Locking/Unlocking Channels

Follow these steps to lock out a channel so that it does not scan even if its system and channel group are selected.

1. While holding down **[Func]**, rotate the scroll control to select the system where the channel is stored.

Basic Operation

-
-
2. Release **[Func]** then press **Hold** within 2 seconds to hold on the system.
 3. Rotate the scroll control to select the channel you want to lock or unlock.
 4. Press **L/O** to lock or unlock the channel.

You can also lock out an active channel by pressing **L/O** while the scanner is stopped on the channel.

ID Scan/ID Search Mode

While you are scanning a trunked system, the scanner can be in either ID Scan or ID Search mode:

- ID Scan – the scanner only stops on talk group ID's that you have programmed into the system
- ID Search – the scanner stops on any unlocked talk group that becomes active.

To toggle between ID Scan and ID Search, press **[Func]** then press **Scan** within 2 seconds while the scanner is scanning the system.

If the scanner does not scan the system long enough for you to easily do this, press **[Func]** while the scanner is scanning the system (or press **[Func]** then rotate the scroll control to select the system). Then, release **[Func]** and press **Scan** within 2 seconds.

Temporarily Holding On a System

To temporarily hold on a system, press and hold **[Func]**. To hold on a different system, continue to hold **[Func]** and rotate the scroll control to select the system. Normal scanning resumes 2 seconds after you release **[Func]**.

Holding On a Channel

To hold on a channel, press **Hold** while the channel is active. To select a different channel, rotate the scroll control. If you scroll past the beginning or end of the current system, the scanner selects channels in the

Basic Operation

previous or next system. To resume scanning, press **Scan**.

Quickly Storing an ID During ID Search

To quickly store an active talk group ID during ID search, press **E**. You see:

Quick TGID Save?

To save the ID into a channel, press **E**. Otherwise, press **•**. If you press **E**, the scanner stores the ID into a channel group called `Qck Save Grp` in the current system.

Quick-Storing Channels or Talk Group ID's

1. Hold on an existing channel in any system.
2. Enter the frequency or talk group ID you want to store (press **•** twice to enter hyphens in talk group ID's).
3. To quick-store the channel or talk group ID, press **E**. Otherwise, press **•**.

If you enter a frequency then press **E**, the scanner stores it in the `Qck Save Grp` group in a system called `Qck Save Cnv Sys`. These are created if they do not exist. Then, the scanner prompts you to save other channel settings.

If you enter a talk group ID then press **E**, the scanner stores it into a channel group named `Qck Save Grp` in the current system. If the talk group ID's format is not the type used by the current system, the scanner displays an error message and does not save the talk group ID.

If you pressed **No** in Step 3, the scanner prompts you to select the system and the group where you want to store the frequency or talk group ID.

Quickly Recalling Channels

1. Press **Hold** to hold on any channel.
2. Press **[Func] + Rcl**. The scanner prompts you to select the system where the channel is stored.
3. Rotate the scroll control to select the system, then press **E**. The scanner prompts you to select the channel group where the channel is stored.
4. Rotate the scroll control to select the group, then press **E**. The scanner prompts you to select a channel.
5. Rotate the scroll control to select the channel, then press **E** to hold on that channel.

Monitoring Trunking Activity

To monitor trunking activity, press **Hold** then turn the scroll control to select the control channel frequency (for a Motorola or EDACS system) or any system frequency (for an LTR system). Active talk group ID's appear on the second line of the display. For Motorola systems, the scanner will show the System ID on the top line of the display. For EDACS systems, the scanner will show the site ID on the top line of the display.

Toggling Channel Alpha Tags

To change the display so the channel and frequency or Talk Group ID appear instead of the alpha tag, press **[Func] + 5**.

Using the Menu

The scanner's menu lets you select options that let you set up and use the scanner.

To use the menu, press **Menu** on the left side of the scanner. To select a menu item, rotate the scroll control clockwise or counterclockwise. The currently-selected menu item is highlighted with a bar on the display. When the menu item you want to select is highlighted, briefly press the scroll control to select it. To back up a level, press **Menu**. To exit the menu mode, press **Menu** again.

This table shows the scanner's menu structure. To find information about a particular menu setting in this manual, go to the page number shown in parentheses next to the setting.

Note: Not all of the options shown in this table may appear at the same time. To view all available options on any screen, rotate the scroll control.

Menu Item	Submenu
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Select System System1 System2 System3</pre> <p>(51)</p>
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Srch/CloCall Opt Freq Lockouts Broadcast Screen CTCSS/DCS Search Repeater Find Max Auto Store Set Delay Time Set Modulation Set Attenuator Set Data Skip Set Step Adjust P25 Level</pre> <p>(107) (108) (95) (109) (110) (112) (90) (110) (110) (111) (112) (79)</p>
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Search for ... Service Search Edit Service Custom Search Edit Custom Search and Store</pre> <p>(94) (98) (96) (97) (100)</p>

Note: the actual Select System submenu display will depend on what is programmed into the scanner.

Using the Menu

Menu Item	Submenu
-- M E N U -- Srch/CloCall Opt Search for ... Close Call	Close Call Close Call Only (104) CC Auto Store (104) Set CC Mode (104) Set CC Override (104) Set CC Alert (104) Set CC Bands (104)
-- M E N U -- Search for ... Close Call Set Priority	Set Priority (54) Off (54) On (54) Plus On (54)
-- M E N U -- Close Call Set Priority WX Operation	WX Operation Weather Scan (113) Weather Alert (113) Program SAME (114) Set Delay Time (112) Set Attenuator (110) WX Alt Priority (115)
-- M E N U -- Set Priority WX Operation Tone-Out for ...	Tone-Out for ... Tone-Out Standby (116) Tone-Out Setup (116)
-- M E N U -- WX Operation Tone-Out for ... Xfer Information	Xfer Information Wired Clone (57) On-Air Clone (58)
-- M E N U -- Tone-Out for ... Xfer Information Settings	Settings Set Backlight (54) Adjust Key Beep (53) Set Battery Save (54) Set Audio AGC (55) Adjust Contrast (55) PC Control (56) See Scanner Info (53)

Using the Menu

Programming Systems Menu

This table shows the scanner's systems menu structure. This menu lets you program new systems or change existing systems. To find information about a particular menu setting in this manual, go to the page number shown under or next to the setting.

To use the systems menu, press **Menu** then briefly press the scroll control. To back up a level, press **Menu**. To exit the menu mode, press **Menu** again.

Note: Not all of the options shown in this table may appear at the same time. To view all available options on any screen, rotate the scroll control

Menu/ Submenu	Option Menu
<div> <div>Select Sys Type</div> <div> Conventional MOT EDCS LT </div> <div> *Programming Conventional Systems* on Page 61 </div> </div>	<div> <div>System 1 C</div> <div> Edit Name (74) Edit Sys Option (75) Edit Group (61) Delete System (83) Copy System (83) </div> </div>
<div> <div>Select Sys Type</div> <div> Conventional MOT EDCS LT </div> <div> *Programming Motorola Systems* on Page 63 </div> <div> <div>System 1</div> <div> P25 800MHz Standard 800MHz Splinter 900MHz band VHF Band UHF Band </div> </div> </div>	<div> <div>System 1 M</div> <div> Edit Name (74) Edit Sys Option (75) Set Frequencies (71) Set Modulation (65) Set Attenuator (83) Edit Group (66) Delete System (83) Copy System (83) </div> </div>
<div> <div>Select Sys Type</div> <div> Conventional MOT EDCS LT </div> <div> *Programming EDACS Systems* on Page 67 </div> <div> <div>EDCS</div> <div> WIDE NARROW SCAT </div> </div> </div>	<div> <div>System 1 E</div> <div> Edit Name (74) Edit Sys Option (75) Set Frequencies (71) Set Attenuator (83) Edit Group (66) Delete System (83) Copy System (83) </div> </div>

Using the Menu

Menu/ Submenu	Option Menu
<div>Select Sys Type</div> <div>Conventional</div> <div>MOT</div> <div>EDCS</div> <div>LT</div> <div> *Programming LTR Systems* on Page 70 </div>	<div>System 1 L</div> <div> Edit Name (74) Edit Sys Option (75) Set Frequencies (71) Set Modulation (65) Set Attenuator (83) Edit Group (71) Delete System (83) Copy System (83) </div>

Using the Menu

Other Settings

Displaying System Information

Viewing Memory Used

Menu → ↺ Settings → ↓
↺ See Scanner Info ↓ ↺
% Memory Used ↓

A bar showing the percent of memory used appears.
Press any key to return to the previous menu, then
press **Scan** or **Hold**.

Viewing the Firmware Version

Menu → ↺ Settings → ↓
↺ See Scanner Info ↓ ↺
Firmware Version ↓

Press any key to return to the previous menu, then
press **Scan** or **Hold**.

Adjusting the Key Beep




Menu → ↺ Settings → ↓
↺ Adjust Key Beep ↓ ↺

Auto - the scanner automatically sets the key beep to
match the master volume setting level you select.

Level 1 - 15 the scanner lets you select a key beep
level. You can choose any of 15 different key beep
levels.

Off - the scanner turns the key beep off.

Locking/Unlocking the Keypad and Scroll

Press and hold down **Func** then press  /  /  to
lock or unlock the keypad. Keypad Lock and On
(if the keypad is locked) or Off (if the keypad is
unlocked) appears. This does not affect the volume
setting. The scroll control still controls the volume
when you lock the controls.

Other Settings

Turning Power Save On or Off

Menu → ⤴ Settings → ⬇
⤴ Set Battery Save ⬇ ⤴

- **On** The scanner goes into low-power mode when you monitor a conventional channel that has no activity.
- **Off** Power save is off.

Priority Scan

Menu → ⤴ Set Priority → ⬇

Or, while holding on any channel, press **Func** + **1/Pri** to select one of these priority modes:



- **Off** Normal scanning
- **On** While scanning a conventional system, the scanner interrupts every 2 seconds and checks the priority channels in each unlocked conventional system. Priority channels in lower priority key numbered systems (starting from 1) have highest priority. **PRI** appears when you select this mode.
- **Plus On** The scanner only scans priority channels in unlocked conventional systems. **PRI** flashes when you select this mode.


Using the Backlight

Menu → ⤴ Settings → ⬇
⤴ Set Backlight ⬇ ⤴



- **10 sec** The backlight stays on for 10 seconds after you press **⏏**.
- **30 sec** The backlight stays on for 30 seconds after you press **⏏**.
- **Squelch** The backlight turns on when the squelch opens then stays on for 5 seconds.

Other Settings

-
-
- **Keypress** The backlight turns on when any key is pressed then stays on for 10 seconds.
 - **Infinite** The backlight turns on when you press  then stays on until you press  again.

Pressing any key while the backlight is on extends the backlight period. Pressing  while the backlight is on turns off the backlight.

Setting the Audio AGC

Menu →  Settings → ↓  Set Audio AGC ↓

This setting helps balance the audio level you hear as you listen to different radio sources so you can hear them at a similar volume. Use this setting if you listen to an audio source that has natural changes in audio level for which you want to compensate.



Analog Rotate the scroll control to select. This setting lets you set the audio AGC for receiving analog channels.

- **On** Press the scroll control to select. Audio AGC is turned on.
- **Off** Press the scroll control to select. Audio AGC is turned off.

Digital Rotate the scroll control to select. This setting lets you set the audio AGC for receiving digital channels.

- **On** Press the scroll control to select. Audio AGC is turned on.
- **Off** Press the scroll control to select. Audio AGC is turned off.

Adjusting the Display Contrast

Menu →  Settings → ↓
 Adjust Contrast ↓

Contrast 1 - 15 the scanner adjusts the display to the contrast level you select.

Other Settings

This setting controls the display's contrast (how light or dark it appears). Use this setting to change the contrast for different viewing conditions. There are 15 contrast settings. You see the change in contrast as you scroll through the settings.

Initializing the Scanner's Memory

Important! This deletes all preprogrammed data. You cannot restore preprogrammed data that has been deleted.

To initialize the scanner's memory, turn off the scanner. Then, press **2**, **9**, and **Hold** while turning it on.

You can change your mind when you next see:
Restore Preprogrammed List? Press "E" for Yes or "." for No.

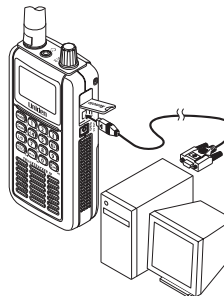
Connecting Your Scanner to a Personal Computer

To connect your scanner to a personal computer, you must first set the scanner's baud rate (the rate at which data is transferred between the scanner and the computer, in bits per second (bps)).

Important! Before you start transferring data between your scanner and your computer, make sure the batteries are fresh or fully charged. If the scanner loses power while you are transferring data, its memory might be corrupted and all information programmed in the scanner might be erased.

Hint: If you have trouble transferring data between your scanner and your computer, try setting the baud rate to a slower setting.

Use the included connection cable to connect your scanner to another BCD396T scanner or your personal computer.



Other Settings

Menu → ⤵ Settings → ⬇
⤵ PC Control ⬇

PC Control Lets you set the baud rate your scanner uses to communicate with a personal computer.

- Off The baud rate is not set.
- 9600 bps The baud rate is set to 9600 bps.
- 19200 bps The baud rate is set to 19,200 bps.
- 38400 bps The baud rate is set to 38,400 bps.
- 57600 bps The baud rate is set to 57,600 bps.
- 115200 bps The baud rate is set to 115,200 bps.

Using the Cloning Options

Lets you set your scanner as a master (source) or slave (recipient), letting you transfer programming to or from another BCD396T scanner. See "Wired Cloning" on Page 57 and "On-Air Cloning" on Page 58.

Wired Cloning

Menu → ⤵ Xfer Information → ⬇
⤵ Wired Clone ⬇

- Master Sets the scanner to be the source scanner.
- Slave Sets the scanner to be the recipient scanner.

To clone (copy) data directly from one BCD396T scanner to another BCD396T scanner, you must first connect the scanners to each other using the included connection cables and a DB9 null modem adapter and DB9 gender changer (neither included), available at most computer stores. Then you must set one scanner as the source and the other as the destination.

Plug the smaller end of each of the included connection cables into **Remote** on the right side of each scanner. Then connect the other end of the cables together using the null modem connector and gender changer.

Then set the scanner containing the programming you want to transfer as the master scanner, then set the other scanner as the slave scanner.

Other Settings

(Master scanner) Clone Master Press SCAN Key

→ **Scan**

(Slave scanner) Clone Slave Press SCAN Key

→ **Scan**

When you are ready to clone the scanner, press **Scan** on the slave scanner first, then on the master scanner. The master scanner checks the connection between the two scanners, then transfers its data to the slave scanner.

When the transfer is complete, **Complete** appears on both scanners. If the transfer did not work, **Error** appears on the master scanner.

On-Air Cloning

You can clone (copy) data from a PC to a BCD396T scanner. This is useful if you want to quickly program 20 or more BCD396T scanners at the same time.

Note: On-air cloning is practical if you are programming more than 10 scanners at the same time. Otherwise, we recommend you use wired programming.

Menu → ↺ Xfer Information → ↓

↺ On-Air Clone ↓

- **Start Cloning** Start on-air cloning.
- **Set Frequency** Lets you set the frequency where your scanner receives the cloning broadcast.
- **Set Modulation** Lets you set the cloning broadcast's modulation type.

To clone (copy) data from a PC to the scanner, you need a transceiver, a PC that has an audio input, and a cable to connect your PC's sound card to the transceiver. Follow the directions supplied with the Uniden Advanced Scanner Director Software (available online at <http://www.uniden.com>) to construct a cable and use on-air cloning.

When you are receiving the cloning broadcast and are ready to clone the scanner, select **Start Cloning**

Other Settings

on the scanner. The scanner receives the data from the transmission

When the transfer is complete, `Complete` appears. If the transfer did not work, `Error` appears.

Programming Radio Systems

Your BCD396T comes preprogrammed with over 500 analog and digital systems from the most populous areas in the US. However, to get the most enjoyment from your scanner (especially if you do not live near one of these counties), you must customize the programming for your area.

To edit an existing system, use the menu to navigate to the system setting you want to change. This section assumes you are programming a new system.

Programming radio systems is completed in two major steps. Don't skip either step!

1. Plan the system.
2. Program the system into your scanner according to the plan you prepared in Step 1.

To make planning easier, planning worksheets are included in the back of this manual for each system type. Copy the worksheets (or download this manual from the Uniden America Corporation website and print extra sheets), then use them to plan out how you will program the scanner.

Important! Before you start programming your scanner, make sure the batteries are fresh or fully charged. If the scanner loses power while you program it, its memory might be corrupted which will require you to reinitialize it (see "Initializing the Scanner's Memory" on Page 56). All information programmed in the scanner, including preprogrammed systems, might be lost.

General Notes

- You can store up to 400 systems.
- Trunking systems can have up to 200 channels each. The number of conventional system channels you can have is limited only by the amount of scanner memory remaining.
- You can store up to 20 channel groups per system.
- Total channels are limited to about 6000 (3000 is typical).

Programming Radio Systems

Programming Conventional Systems

Menu → Program System → ↓

↺ New System ↓

↺ Conventional ↓

Confirm? Yes="E" / No="."

The scanner creates an empty conventional system, with a default name of System n C. n is a number that increments as you add new systems. C indicates that this is a conventional system.

Refer to the appropriate section to set system-wide options:

- See "Editing the System Name" on Page 74
- See "Editing the System Quick Key" on Page 75
- See "Setting System Lockout" on Page 75
- See "Setting the System Hold Time" on Page 76
- See "Setting the Channel Delay Time" on Page 76
- See "Deleting Systems" on Page 83
- See "Copying Systems" on Page 83
- See "Entering/Editing Conventional Channel Groups" on Page 61

Entering/Editing Conventional Channel Groups

To enter channels in a conventional system, first set up a channel group (or groups) to hold the channels. Then, enter the channel and channel parameters in the group(s).

Setting Up a Channel Group

Menu → Program System → ↓

↺ Select the system → ↓

↺ Edit Group ↓

↺ New Group ↓

The scanner creates a group with a default name of Group n. n increments by one for each new group you create within a system. Refer to the appropriate section to set group-wide options:

- See “Entering/Editing the Group Name” on Page 84
- See “Setting the Group Quick Key” on Page 85
- See “Deleting Groups” on Page 85
- See “Setting System Lockout” on Page 75
- See “Entering/Editing Conventional Channels” on Page 62

Entering/Editing Conventional Channels

Menu → Program System → ↓
↺ Select the system → ↓
↺ Edit Group ↓
↺ Select the group → ↓
↺ Edit Channel → ↓
↺ New Channel → ↓

Refer to the appropriate section to change a channel setting:

- See “Editing the Channel Name” on Page 86
- See “Editing Frequencies (Conventional Channels Only)” on Page 87
- See “Setting Channel Priority (Conventional Channels Only)” on Page 87
- See “Deleting Channels” on Page 92
- See “Copying/Pasting Channels” on Page 92

Note: The scanner automatically sets the step to match the input frequency.

Programming Radio Systems

Programming Motorola Systems

Menu → Program System → ↓

↺ New System ↓

↺ MOT ↓

Next, rotate the scroll control to select the type of Motorola system you want to program, then briefly press the scroll control to select it.

- P25 - Use for Motorola Astro APCO 25 Digital systems in any band
- 800MHz Standard - Use for 800 MHz systems that use the standard band plan
- 800MHz Splinter - Use for 800 MHz systems that use the splinter band plan (typically near international borders)

Note: Splinter systems have frequencies below 866 MHz that end in 0. For example, 851.0250 would be the frequency of a splinter system.

- 900MHz Band - Use for 900 MHz systems
- VHF band - Use for VHF systems
- UHF band - Use for UHF systems

Confirm? Yes="E" / No="."

Next, refer to the appropriate section to set system-wide options. For most settings, you can accept the default. However, for the items in **bold**, you must enter information in order for your scanner to scan the system.

- See "Editing the System Name" on Page 74
- See "Editing the System Quick Key" on Page 75
- See "Setting System Lockout" on Page 75
- See "Setting the System Hold Time" on Page 76
- See "Setting the Channel Delay Time" on Page 76
- See "Setting ID Scan/Search (Trunked Systems Only)" on Page 77
- See "Editing the Fleet Map (Motorola Systems Only)" on Page 77 (**must be set up for Type I and Type II Hybrid systems**)

Programming Radio Systems

-
-
- See “Setting the Motorola Status Bit (Motorola Systems Only)” on Page 78
 - See “Setting the End Code Operation (Motorola Systems Only)” on Page 79
 - See “Setting I-Call (Motorola and EDACS Systems Only)” on Page 79
 - See “Setting Emergency Alert (Motorola and EDACS Systems Only)” on Page 80
 - See “Adjusting the P25 Level (Motorola and Conventional Systems Only)” on Page 81
 - See “Setting Control-Channel Only (Motorola Systems Only)” on Page 80
 - See “Setting System Lockout” on Page 75
 - See “Reviewing Locked Out Frequencies” on Page 107
 - See “Setting System Attenuation (Trunked Systems Only)” on Page 83
 - See “Deleting Systems” on Page 83
 - See “Copying Systems” on Page 83
 - See “Setting System Frequencies” on Page 64
 - See “Entering/Editing Motorola Channel Groups” on Page 66

Setting System Frequencies

Menu → Program System → ↓

↻ Select the system → ↓

↻ Set Frequencies ↓

Input a system frequency, then press the scroll control.

To enter additional frequencies, press **Menu**, use the scroll control to select **New Frequency**, then repeat the above.

Note: If you select Control Channel Only mode (see “Setting Control-Channel Only (Motorola Systems Only)” on Page 80), you only need to enter the frequency(s) that can be assigned as the control channel. Most frequency lists usually indicate which of

Programming Radio Systems

the frequencies are the control channel frequencies. Otherwise, you must enter all of the frequencies.

Setting Modulation

Menu → Program System → ↓

↺ Select the system → ↓

↺ Set Modulation ↓

Auto - the scanner uses the default modulation for the frequency band.

FM - the scanner uses FM (frequency modulation) for the frequency band.

NFM - the scanner uses narrowband FM for the frequency band.

Note: The default setting is **Auto**.

This setting controls the modulation method used for the frequency band. In most cases, if you leave this set to **Auto**, the scanner automatically selects the correct modulation type for the system you are programming.

Setting Attenuation

Menu → Program System → ↓

↺ Select the system → ↓

↺ Set Attenuator ↓

This setting controls whether the attenuator will be on or off for the current system. Select your setting then press the scroll control.

Off - the attenuator is off.

On - system frequencies are attenuated by about 18 dB.

Notes:

- Turn on this setting if you are near strong signal sources. Attenuation can help reduce interference and desensitization that strong signals create.

Programming Radio Systems

-
-
- You can also turn this setting on or off by holding on a trunked system, then pressing **[Func]** + **E**.

Entering/Editing Motorola Channel Groups

To enter channels in a system, first set up a channel group (or groups) to hold the channels. Then, enter the channel and channel parameters in the group(s).

Setting Up a Channel Group

[Menu] → Program System → ↓
 ↻ Select the system → ↓
 ↻ Edit Group ↓

The scanner creates a group with a default name of Group nn. nn increments by one for each new group you create within a system.

Next, refer to the appropriate section to set group-wide options:

- See “Entering/Editing the Group Name” on Page 84
- See “Setting the Group Quick Key” on Page 85
- See “Deleting Groups” on Page 85
- See “Copying Systems” on Page 83
- See “Entering/Editing Motorola Channels” on Page 66
- See “Setting I-Call (Motorola and EDACS Systems Only)” on Page 79

Entering/Editing Motorola Channels

[Menu] → Program System → ↓
 ↻ Select the system → ↓
 ↻ Edit Group ↓
 ↻ Select the group → ↓
 ↻ Edit Channel → ↓
 ↻ New Channel → ↓

Programming Radio Systems

Enter a talk group ID → ↓

Note: You can enter I-Calls by pressing • then the I-Call number. You can enter the I-Call wild card by pressing • then 0.

Refer to the appropriate section to change a channel setting:

- See “Adjusting the P25 Level (Motorola and Conventional Systems Only)” on Page 81
- See “Editing the Channel Name” on Page 86
- See “Editing the Talk Group ID (Trunked Channels Only)” on Page 88
- See “Setting Channel Lockout” on Page 91
- See “Deleting Channels” on Page 92
- See “Copying/Pasting Channels” on Page 92

To program another channel within the same group, press **Menu**, then repeat the above. To create another channel group and enter more channels, press **Menu** three times, then proceed from “Entering/Editing Motorola Channel Groups” on Page 66.

Programming EDACS Systems

Menu → Program System → ↓

↺ New System ↓

↺ EDACS ↓

Confirm? Yes="E" / No="."

Next, rotate the scroll control to select the type of EDACS system you want to program, then briefly press the scroll control to select it.

- WIDE - Use for wideband EDACS systems
- NARROW - Use for narrowband EDACS systems
- SCAT - Use for EDACS SCAT (Single Channel Autonomous Trunking)

Confirm? Yes="E" / No="."

The scanner creates an empty EDACS system, with a default name of System n E.

Programming Radio Systems

n is a number that increments as you add new systems. E indicates that this is an EDACS system.

Next, refer to the appropriate section to set system-wide options. For most settings, you can accept the default. However, for the items in **bold**, you must enter information in order for your scanner to scan the system.

- See “Editing the System Name” on Page 74
- See “Editing the System Quick Key” on Page 75
- See “Setting System Lockout” on Page 75
- See “Setting the System Hold Time” on Page 76
- See “Setting the Channel Delay Time” on Page 76
- See “Setting ID Scan/Search (Trunked Systems Only)” on Page 77
- See “Setting I-Call (Motorola and EDACS Systems Only)” on Page 79
- See “Adjusting the P25 Level (Motorola and Conventional Systems Only)” on Page 81
- See “Setting the EDACS ID Format (EDACS Systems Only)” on Page 82
- See “Reviewing Locked Out Frequencies” on Page 107
- See “Setting Channel Attenuation (Conventional Channels Only)” on Page 90
- See “Deleting Systems” on Page 83
- See “Copying Systems” on Page 83
- See “Setting System Frequencies” on Page 68
- See “Entering/Editing EDACS Channel Groups” on Page 69

Setting System Frequencies

Menu → Program System → ↓

↺ Select the system → ↓

↺ Set Frequencies ↓

↺ New Frequency ↓

Programming Radio Systems

Input a system frequency, then press the scroll control. The scanner then prompts you to enter the LCN for the entered frequency. Enter the LCN, then press the scroll control.

To enter additional frequencies, press **Menu**, use the scroll control to select *New Frequency*, then repeat the above.

Note: The scanner only accepts a single frequency and no LCN for SCAT systems.

Entering/Editing EDACS Channel Groups

To enter channels in a system, first set up a channel group (or groups) to hold the channels. Then, enter the channel and channel parameters in the group(s).

Setting Up a Channel Group

Menu → Program System → ↓
↻ Select the system → ↓
↻ Edit Group ↓

The scanner creates a group with a default name of *Group nn*. *nn* increments by one for each new group you create within a system.

Next, refer to the appropriate section to set group-wide options:

- See “Entering/Editing the Group Name” on Page 84
- See “Setting the Group Quick Key” on Page 85
- See “Deleting Groups” on Page 85
- See “Editing the Channel Name” on Page 86
- See “Setting Group Lockout” on Page 85

Entering/Editing EDACS Channels

Menu → Program System → ↓
↻ Select the system → ↓
↻ Edit Group ↓

↶ Select the group → ↓
↶ Edit Channel → ↓
↶ New Channel → ↓
Enter a talk group ID → ↓

Note: You can enter I-Calls by pressing • then the I-Call number. You can enter the I-Call wild card by pressing • then **0**.

Refer to the appropriate section to change a channel setting:

- See “Editing the Channel Name” on Page 86
- See “Setting Channel Lockout” on Page 91
- See “Editing the Talk Group ID (Trunked Channels Only)” on Page 88
- See “Deleting Channels” on Page 92
- See “Copying/Pasting Channels” on Page 92

To program another channel within the same group, press **Menu**, then repeat the above. To create another channel group and enter more channels, press **Menu** three times, then proceed from “Entering/Editing EDACS Channel Groups” on Page 69.

Programming LTR Systems

Menu → Program System → ↓
↶ New System ↓
↶ LT ↓

Confirm? Yes="E" / No="."

The scanner creates an empty LTR system, with a default name of System n L.
n is a number that increments as you add new systems. L indicates that this is an LTR system.

Next, refer to the appropriate section to set system-wide options. For most settings, you can accept the default. However, for the items in **bold**, you must enter information in order for your scanner to scan the system.

- See “Editing the System Name” on Page 74

Programming Radio Systems

-
-
- See “Setting the System Hold Time” on Page 76
 - See “Editing the System Quick Key” on Page 75
 - See “Setting the Channel Delay Time” on Page 76
 - See “Setting ID Scan/Search (Trunked Systems Only)” on Page 77
 - See “Reviewing Locked Out Frequencies” on Page 107
 - See “Setting Channel Attenuation (Conventional Channels Only)” on Page 90
 - See “Deleting Systems” on Page 83
 - See “Copying Systems” on Page 83
 - See “Setting System Frequencies” on Page 71
 - **See “Entering/Editing LTR Channel Groups” on Page 71**

Setting System Frequencies

Menu → Program System → ↓

↺ Select the system → ↓

↺ Set Frequencies ↓

↺ New Frequency ↓

Input a system frequency, then press the scroll control. The scanner then prompts you to enter the LCN for the entered frequency. Enter the LCN, then press the scroll control.

To enter additional frequencies, press **Menu**, use the scroll control to select *New Frequency*, then repeat the above.

Entering/Editing LTR Channel Groups

To enter channels in a system, first set up a channel group (or groups) to hold the channels. Then, enter the channel and channel parameters in the group(s).

Setting Up a Channel Group

Menu → Program System → ↓

↺ Select the system → ↓

↺ Edit Group ↓

The scanner creates a group with a default name of Group nn. nn increments by one for each new group you create within a system.

Next, refer to the appropriate section to set group-wide options:

- See “Entering/Editing the Group Name” on Page 84
- See “Setting the Group Quick Key” on Page 85
- See “Setting Group Lockout” on Page 85
- See “Deleting Groups” on Page 85
- See “Entering/Editing LTR Channels/ Talkgroups” on Page 72

Entering/Editing LTR Channels/ Talkgroups

Menu → Program System → ↓

↺ Select the system → ↓

↺ Edit Group ↓

↺ Select the group → ↓

↺ Edit Channel → ↓

↺ New Channel → ↓

Enter a talk group ID → ↓

Refer to the appropriate section to change a channel setting:

- See “Editing the Channel Name” on Page 86
- See “Setting Channel Lockout” on Page 91
- See “Editing the Talk Group ID (Trunked Channels Only)” on Page 88
- See “Deleting Channels” on Page 92
- See “Copying/Pasting Channels” on Page 92

To program another channel within the same group, press **Menu**, then repeat the above.

Programming Radio Systems

To create another channel group and enter more channels, press **Menu** four times, then proceed from “Setting Up a Channel Group” on Page 71.

To direct-enter LTR talkgroups, follow the steps under “Quick-Storing Channels or Talk Group ID’s” on Page 47.

Programming/Editing Optional Settings

This section details the instructions for each of the optional programming steps referred to in “Programming Radio Systems” on Page 60. Use the instructions in the appropriate section to enter or edit a setting.

System-Level Settings

These settings apply to the entire system.

Editing the System Name

Menu → Program System → ↓

↻ Select the system → ↓

↻ Edit Name ↓

To enter a letter, turn the scroll control until the character you want appears. To enter a decimal point, press •. To move the cursor to the left, press </4 or hold **Func** and rotate the scroll control to the left.

To move the cursor to the right, press 6/> or hold **Func** and rotate the scroll control to the right.

To clear a character, press • twice. To clear all characters, press • 3 times.

To accept an entry, press **E** or press down on the scroll control.

Hints:

- Each system name can be up to 16 characters. Abbreviate as necessary to fit.
- The default system names include the following letter in the 16th position to indicate the system type:

M = Motorola
E = EDACS
L = LTR
C = Conventional

Programming/Editing Optional Settings

Editing the System Quick Key

[Menu] → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

Set Quick Key ↓

After selecting this option, select any number from 0-99 to assign the system to a quick key or press • to assign the system to no quick key, then press **E**.

Hints:

- Access single-digit system Quick Keys by pressing the single digit on the keypad during scanning. Access two-digit system Quick Keys by pressing • then both digits.
- You can assign as many systems to the same quick key as you want.
- To be scanned, a system's quick key must be activated and the system must be unlocked.

Setting System Lockout

[Menu] → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Set Lockout ↓

This setting controls whether the system is scanned when its quick key is enabled. Rotate the scroll control to select your setting, then press **E**.

Locked - the system is not scanned

Unlocked - the system is scanned

Note: You can also lock or unlock a system by holding **[Func]** and rotating the scroll control to select the system, then pressing **[Func] + L/O**.

Programming/Editing Optional Settings

Setting the System Hold Time

Menu → Program System → ↓
↺ Select the system → ↓
↺ Edit Sys Option ↓
↺ Set Hold Time ↓

This setting controls how many seconds the scanner scans a system before moving to the next unlocked system. Enter a value from 0-255, then press **E** to save the setting.

Notes:

- This setting is available only when a control channel exists in a trunked system.
- If you select 0, the scanner stays on the system for a minimal time (only long enough to check current system activity).
- The default setting is 2 seconds for each system.
- For conventional systems, all unlocked channels will be scanned at least once regardless of this setting.
- The scanner moves to the next system after the hold time expires, any current transmission ends, and the channel delay time expires.
- Due to the control method for these system types, the scanner always scans LTR and EDACS SCAT systems for at least 1 second.

Setting the Channel Delay Time

Menu → Program System → ↓
↺ Select the system → ↓
↺ Edit Sys Option ↓
↺ Set Delay Time ↓

This setting controls how many seconds the scanner waits after a transmission ends before resuming

Programming/Editing Optional Settings

scanning. Enter a value from 1-5 or Off, then press **E** or the scroll control.

Notes:

- The default setting is 2 seconds for each system.
- This setting applies to all channels within the system.

Setting ID Scan/Search (Trunked Systems Only)

Menu → Program System → ↓
↻ Select the system → ↓
↻ Edit Sys Option ↓
↻ ID Scan/Search ↓

This setting controls how the system will be scanned. Select your setting, then press **E**.

ID Scan - the scanner only stops on channels you have programmed into the system.

ID Search - the scanner stops on any transmission for unlocked talk group ID's.

Note: You can also change this setting by pressing **Scan** while scanning the system.

Editing the Fleet Map (Motorola Systems Only)

Menu → Program System → ↓
↻ Select the system → ↓
↻ Edit Sys Option ↓
↻ Edit Fleet Map ↓

For Motorola Type I systems, you must enter a system fleet map in order for the scanner to properly track and display talk group ID's. The fleet map is usually included in the same resource that provided system frequencies and talk group ID lists.

Programming/Editing Optional Settings

Rotate the scroll control to select the fleet map:

Preset - select from the 16 most common fleet maps (see "Preset Fleet Maps" on Page 129). Press **E** to select.

Custom - allows you to enter a custom fleet map. Enter the size code for each block. Press **E** to select.

Notes:

- If you don't know the fleet map for your Motorola Type I system, check the Internet. This information is commonly posted on sites such as those we reference in "Where To Get More Information" on Page 29.
- The default setting of no fleet map is the correct setting for Motorola Type II systems.

Setting the Motorola Status Bit (Motorola Systems Only)

Menu → Program System → ↓
↻ Select the system → ↓
↻ Edit Sys Option ↓
↻ Set Status Bit ↓

Motorola analog systems use talk group ID's in multiples of 16. ID numbers that fall between these ID's indicate special status flags for the system. This setting determines how the scanner will handle ID's that are not multiples of 16. Select your setting then press **E**.

Ignore - the scanner rounds all received ID's down to the next interval of 16.

Yes - the scanner treats all received ID's as unique ID's.

Note: The default setting is **Ignore**.

Programming/Editing Optional Settings

Setting the End Code Operation (Motorola Systems Only)

Menu → Program System → ↓

↶ Select the system → ↓

↶ Edit Sys Option ↓

↶ Set End Code ↓

This setting determines how the scanner handles the transmission end code sent by most Motorola systems. Select your setting then press **E**.

Yes - the scanner immediately returns to the control channel when it detects the end code.

Ignore - the scanner does not return to the control channel until the carrier drops.

Note: The default setting is **Yes**.

Setting I-Call (Motorola and EDACS Systems Only)

Menu → Program System → ↓

↶ Select the system → ↓

↶ Edit Sys Option ↓

↶ Set I-Call ↓

This setting determines how your scanner treats I-calls while ID Searching.

On - the scanner tracks I-calls. Press **E** to select.

Off - the scanner ignores I-calls. Press **E** to select.

Only - the scanner only tracks I-calls and ignores other radio traffic on the system. Press **E** to select.

Note: The default setting is **Off**.

Setting Emergency Alert (Motorola and EDACS Systems Only)

Menu → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Emergency Alert ↓

Off - the scanner does not alert you to emergency transmissions.

Alert 1 - 9 the scanner sounds an alert beep to notify you of the emergency transmission. You can choose any of 9 different beep types.

→ **Set Level**

Auto - the scanner automatically sets the emergency alert beep to the master volume level.

Level 1 - 15 - the scanner adjusts the volume you hear to the level you select.

Setting Control-Channel Only (Motorola Systems Only)

Menu → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Set C-Ch Only ↓

This setting determines the frequencies you need to enter for Motorola systems. Select your setting, then press **E**.

Off - you must enter all voice and control channel frequencies.

On - you only need to enter control channel frequencies.

Note: The scanner defaults to **On**.

Programming/Editing Optional Settings

Reviewing Locked Out Frequencies

Menu → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Rvw ID: Srch L/O ↓

The scanner displays the first locked-out frequency and prompts you to unlock the frequency. Press **E** to unlock the frequency. Or, rotate the scroll control or press **•** to select a different frequency. To exit the review, press **Menu**.

Clearing All Locked-Out IDs

Menu → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Clr All L/O IDs ↓

The scanner prompts you to confirm deletion. To confirm and delete all locked-out IDs in the selected system, press **E**. Otherwise, to cancel, press **•**.

Adjusting the P25 Level (Motorola and Conventional Systems Only)

Menu → Program System →

↻ Select the system ↓

↻ Edit Sys Option ↓

↻ Adjust P25 Level ↓

This setting determines some system-specific parameters for digital channels. In most cases, setting this to **Auto** provides the best performance. However, you can also manually set the digital decode threshold. This setting affects all channels in the current system.

Programming/Editing Optional Settings

Auto - the scanner automatically adjusts the digital decode threshold to match the transmission you are hearing when it receives a strong signal and has a high decode rate.

Manual - lets you manually adjust the digital decode threshold. To manually adjust the P25 level, select Manual.

Default - sets the digital decode threshold to the default value. Use this setting to return to the value that usually provides adequate performance. This is handy if you have manually adjusted the value to a setting that prevents proper decoding.

Note: This setting has no effect on how these systems are received.

Setting the EDACS ID Format (EDACS Systems Only)

Menu → Program System →
↻ Select the system ↓
↻ Edit Sys Option ↓
↻ EDACS ID Format ↓

EDACS talk group ID's are commonly provided in one of two formats: AFS and Decimal. This setting determines how you enter EDACS ID's and how the scanner displays them.

AFS Format - the scanner uses AFS format for talk group ID's

Decimal Format - the scanner uses decimal format for talkgroup ID's

Notes:

- The scanner defaults to AFS (agency, fleet, subfleet) format - the format used in most EDACS systems.
- See "EDACS Trunking" on Page 27 for more information about the AFS format.

Programming/Editing Optional Settings

Setting System Attenuation (Trunked Systems Only)

Menu → Program System →

↺ Select the system ↓

↺ Set Attenuator ↓

This setting controls whether the attenuator will be on or off for the current system. Select your setting then press **E**.

Off - the attenuator is off.

On - system frequencies are attenuated by about 18 dB.

Notes:

- Turn on this setting if you are near strong signal sources. Attenuation can help reduce interference and desensitization that strong signals create.
- You can also turn this setting on or off by holding on a trunked system, then pressing **Func** + **E**.

Deleting Systems

Menu → Program System →

↺ Select the system ↓

↺ Delete System ↓

The scanner prompts you to confirm deletion.
To confirm, press **E**. To cancel, press **•**.

Notes:

- Deleted systems cannot be restored. You must re-enter them.
- You cannot restore preloaded systems.

Copying Systems

To copy a system including all settings, groups, and channels:

Programming/Editing Optional Settings

Menu → Program System →

↺ Select the system ↓

↺ Copy System ↓

New Sys Name?

Enter a name for the copied system, then press **E**.

Group-Level Settings

The settings in this section apply to all of the channels stored in the current group.

Entering/Editing the Group Name

Menu → Program System →

↺ Select the system ↓

↺ Edit Group ↓

Select the group → ↓

Edit Name → ↓

Follow these steps to enter/edit the group name.

1. Rotate the scroll control to select the first letter.
2. Press and hold down **Func** then rotate the scroll control once to select the next letter.
3. Repeat Steps 1 and 2 until you have entered the system name. Then press **E** or press down on the scroll control to accept the setting.

Hints:

- Each group name can be up to 16 characters. Abbreviate as necessary to fit.
- The group and system name alternate in the top line of the display when the scanner stops on a channel.
- Press • twice to delete the current character.
- Press • three times to clear the entire alpha tag.

Programming/Editing Optional Settings

Setting the Group Quick Key

Menu → Program System →

↶ Select the system ↓

↶ Edit Group ↓

Select the group → ↓

↶ Set Quick Key → ↓

After selecting this option, press **0-9** to assign the group to a quick key or press **•** to assign the system to no quick key, then press **E**.

Hints:

- You can assign as many groups to the same quick key as you want.
- A group's quick key must be activated to be scanned.

Setting Group Lockout

Menu → Program System →

↶ Select the system ↓

↶ Edit Group ↓

Select the group → ↓

↶ Set Lockout → ↓

This setting determines whether the scanner will scan this group when it is enabled. Select your setting, then press **E**.

Lockout - the group is not scanned.

Unlocked - the group is scanned.

Note: The default setting is Unlocked.

Deleting Groups

Menu → Program System →

↶ Select the system ↓

↶ Edit Group ↓

Programming/Editing Optional Settings

Select the group → ↓

↶ Delete Group → ↓

The scanner prompts you to confirm deletion. To confirm, press **E**. To cancel, press **•**.

Note: Deleted groups cannot be restored. You must re-enter them.

Channel-Level Settings

These settings affect only the channel you are programming.

Editing the Channel Name

Menu → Program System →

↶ Select the system ↓

↶ Edit Group ↓

Select the group → ↓

↶ Edit Channel → ↓

Select the channel → ↓

↶ Edit Name → ↓

Follow these steps to enter/edit the channel name.

1. Rotate the scroll control to select the first letter.
2. Press and hold down **Func** then rotate the scroll control once to select the next letter.
3. Repeat Steps 1 and 2 until you have entered the channel name. Then press **E** or press down on the scroll control to accept the setting.

Hints:

- Each channel name can be up to 16 characters. Abbreviate as necessary to fit.
- The channel name appears on the second line of the display when the scanner stops on a channel.
- If you do not enter a channel name, the scanner displays the frequency (for conventional systems)

Programming/Editing Optional Settings

or the talk group ID (for trunked systems) when it stops on a channel.

- Press **•** twice to delete the current character.
- Press **•** three times to clear the entire alpha tag.
- Channel names take up extra memory. To maximize channels, use channel names only where necessary.

Editing Frequencies (Conventional Channels Only)

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓
Select the channel → ↓
Input Frequency

Input the frequency, then press the scroll control.
To change the frequency you entered, turn the scroll control to select **Edit Frequency**, then press the scroll control.

Setting Channel Priority (Conventional Channels Only)

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓
Select the channel → ↓
↺ Set Priority → ↓

This setting controls whether the scanner treats the channel as a priority channel while scanning. Select your setting, then press **E**.

Programming/Editing Optional Settings

On - when you turn on the Priority feature, the channel will be scanned every 2 seconds. **P** appears.

Off - the channel will not be treated with priority.

Note: The default setting is Off.

Setting Channel Alert

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓
Select the channel → ↓
↺ Set Alert → ↓

Off - the scanner does not alert you to emergency transmissions.

Alert 1 - 9 - the scanner sounds an alert beep to notify you of the emergency transmission. You can choose any of 9 different beep types.

→ Set Level

Auto - the scanner automatically sets the emergency alert beep to the master volume level.

Level 1 - 15 - the scanner adjusts the volume you hear to the level you select.

Editing the Talk Group ID (Trunked Channels Only)

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓

Programming/Editing Optional Settings

Select the talk group ID → ↓
↺ Edit TGID → ↓

To edit the talk group ID, enter the talk group ID you want using the number keys on the keypad. Then press down on the scroll control to accept it.

Setting CTCSS/DCS (Conventional Channels Only)

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓
Select the channel → ↓
↺ Set CTCSS/DCS → ↓

This setting controls how a subaudible CTCSS or DCS is used for the channel. Select your setting, then press **E**.

Off - any signal opens squelch.

Search - the scanner searches for and displays any CTCSS or DCS tone that accompanies the transmission.

CTCSS - the scanner only opens squelch if the CTCSS tone you select is also present with the signal. The scanner then prompts you to enter or scroll to the desired tone.

DCS - the scanner only opens squelch if the DCS tone you select is also present with the signal. The scanner then prompts you to enter or scroll to the desired tone.

Set Lockout - the scanner does not stop on the channel if the tone you select is present. The scanner prompts you to select a CTCSS or DCS tone.

Notes:

- The scanner will not detect or decode P25 signals if you turn on CTCSS/DCS search.

Programming/Editing Optional Settings

-
-
- The default setting is Off.
 - See “What is CTCSS/DCS?” on Page 20 for a complete list of CTCSS and DCS tones.

Setting the System Frequency Modulation

Menu → ↺ Srch/CloCall Opt → ↓
↺ Set Modulation ↓

Auto - the scanner uses the default modulation for the frequency band.

AM - the scanner uses AM (amplitude modulation) for the frequency band.

FM - the scanner uses FM (frequency modulation) for the frequency band.

NFM - the scanner uses narrowband FM for the frequency band.

WFM - the scanner uses wideband FM for the frequency band.

Note: The default setting is Auto.

This setting controls the modulation method used for the frequency band. In most cases, if you leave this set to Auto, the scanner automatically selects the correct modulation type for the system you are programming.

Setting Channel Attenuation (Conventional Channels Only)

Menu → Program System →
↺ Select the system ↓
↺ Edit Group ↓
Select the group → ↓
↺ Edit Channel → ↓

Programming/Editing Optional Settings

Select the channel → ↓

↻ Set Attenuator → ↓

This setting controls whether the scanner attenuates signals on this channel. Select your setting, then press **E**.

On - the channel is attenuated by about 18 dB.

Off - the channel is not attenuated.

Notes:

- The default setting is Off.
- For trunked systems, the attenuation is a system-level setting.
- You can also toggle this setting by holding on the channel and pressing **Func** and **E**.

Setting Channel Lockout

Menu → Program System → **E** ↻

Select the system → **E** ↻

Edit Group → **E** ↻

Select the group → **E** ↻

↻ Edit Channel → ↓

Select the channel → ↓

↻ Set Lockout → ↓

This setting determines whether the scanner will scan this channel when its system and group are enabled. Select your setting, then press **E**.

Lockout - the channel is not scanned.

Unlocked - the channel is scanned.

Notes:

Programming/Editing Optional Settings

-
-
- The default setting is Unlocked.
 - You can also lock or unlock a channel by selecting it while scanning or holding, then pressing **L/O**. See “Basic Operation” on Page 42.

Deleting Channels

Menu → Program System →
 ↺ Select the system ↓
 ↺ Edit Group ↓
 Select the group → ↓
 ↺ Edit Channel → ↓
 Select the channel → ↓
 ↺ Delete Channel → ↓

The scanner prompts you to confirm deletion.
 To confirm, press **E**. To cancel, press **•**.

Note: Deleted channels cannot be restored. You must re-enter them.

Copying/Pasting Channels

To copy a channel including all settings:

Menu → Program System →
 ↺ Select the system ↓
 ↺ Edit Group ↓
 Select the group → ↓
 ↺ Edit Channel → ↓
 Select the channel → ↓
 ↺ Copy Channel → ↓

The scanner copies the channel into a copy buffer.
 To paste the channel into the same or another system:

Menu → Program System →
 ↺ Select the system ↓
 ↺ Edit Group ↓

Programming/Editing Optional Settings

Select the group → ↓

↻ Edit Channel → ↓

Select the channel → ↓

↻ Paste Channel → ↓

Then, if necessary, edit the channel you copied to give it a unique name and other settings.

Note: The paste option appears only if you have previously copied a channel from a system of the same type you are currently editing.

Searching and Storing

Service Search

Service Search lets you quickly select and search the scanner's preprogrammed search ranges. During service search, the scanner searches starting with the lowest frequency in the search range you select to the highest frequency in the range.

Menu → ↻ Search for ... → ↓

Service Search ↓

↻ Select the service search type → ↓

The following search bands appear.

- Public Safety
- News
- HAM Radio
- Marine
- Railroad
- Air
- CB Radio
- FRS/GMRS
- Racing
- TV Broadcast
- FM Broadcast
- Special

The scanner searches the service you selected, stopping on any transmission it finds and displaying the frequency. Turn the scroll control to change the search direction. An arrow appears, showing the current search direction.

To hold searching, press **Hold**. To resume searching, press **Func** then press **Scan/Srch**. Or, press **Hold**.

To lock out a frequency found while searching, press **L/O**. **Locked Out** appears and the scanner resumes service search.

Notes:

Searching and Storing

-
-
- If all frequencies in the search band you selected are locked out, **All Locked!** appears and the scanner does not search the band.
 - If the service you select uses channels (such as CB Radio or Marine), the scanner displays the service channel number.

Quick Search

Quick Search lets you search from the currently-tuned frequency if you are scanning a conventional system or sets the system to ID search if you are scanning a trunked system.

If you are on a conventional system or channel, press **[Func]** and **Scan/Srch** to start quick search. **Quick Search?** Yes = "E" / No = "." appears. **Qck Search Hold** appears if you press **Hold**. Press **E** to start quick search or **No** to go to the search menu.

CTCSS/DCS Search

CTCSS/DCS Search lets you search for CTCSS or DCS tones when it finds an active frequency in search and Close Call modes. You can identify up to 50 CTCSS tones and 104 DCS codes.

Note: The scanner will not detect or decode P25 signals if you turn on CTCSS/DCS search.

[Menu] → ↻ **Srch/CloCall Opt** → ↓
↻ **CTCSS/DCS Search** ↓ ↻

Turning this option on lets the scanner search for CTCSS/DCS tones. If the scanner detects the tone, it displays the tone's frequency and DCS code. Select your setting, then press the scroll control.

On - CTCSS/DCS search is turned on.

Off - CTCSS/DCS search is turned off.

Searching and Storing

Custom Search

Custom Search lets you program and search 10 custom search ranges. You can search any of these ranges simultaneously and select each custom search range you set. During custom search, the scanner searches starting with the lowest frequency in the search range you select to the highest frequency in the range.

Notes:

- Search ranges are preset. See “Editing a Custom Search Range” on Page 97 to change the range.
- You cannot turn off all custom search ranges.

Menu → ↺ Search for ... → ↓

OR

Func + **Scan/Srch** → •

↺ Custom Search ↓

The scanner starts custom search of the custom search range you selected, stopping on any transmission it finds and displaying the frequency. Turn the scroll control to change the search direction. An arrow appears, showing the current search direction.

To turn search ranges on or off, press **0** and **1-9**.

To hold searching, press **Hold**. To resume searching, press **Func** then press **Scan/Srch** or **Hold** again.

To lock out a frequency found while searching, press **L/O**. **Locked Out** appears and the scanner resumes custom search.

If you turn off the active custom search range, the scanner skips to the next custom search range and continues searching.

Note: If all frequencies in all active custom search ranges are locked out, **All Locked!** appears and the scanner does not stop.

Searching and Storing

Editing a Custom Search Range

You can edit up to 10 custom search ranges. The names of the custom search ranges appear on the display. The default custom search range names appear as Custom 1, Custom 2, and so on.

Menu → ↺ Search for ... → ↓

OR

Func + **Scan/Srch** → • ↓

↺ Edit Custom ↓

Select your setting, then press the scroll control.

Edit Name - lets you edit the custom search range's name

Edit Srch Limit - lets you view and select the frequency ranges to search. The scanner prompts you to enter the upper and lower search limits.

Set Delay Time - lets you set the amount of time the scanner will delay before continuing to search after a transmission ends

Set Modulation - lets you set the custom search range's modulation type

Set Attenuator - lets you set whether the scanner will attenuate reception by 18dB during search

Set Data Skip - lets you set whether the scanner will skip data transmissions during search

Set Step - lets you set the custom search range's step (the gap between frequencies)

Set C-Ch Only - lets you search for a Motorola control channel. If it finds one, the scanner scans the system.

Adjust P25 Level - adjusts the digital decode threshold to match the transmission you are hearing when it receives a strong signal and has a high decode rate.

Search with Scan - sets whether the scanner includes the custom search during scanning.

Searching and Storing

If unlocked, the scanner first scans all selected systems, then searches the selected service searches for the selected hold time (0-255 seconds).

Editing a Service Search

You can change the way service search works for each service.

Menu → ↻ Search for ... → ↓

OR

Func + **Scan/Srch** → • ↓

↻ Edit Service ↓

Select your setting, then press the scroll control.

- **Set Delay Time** This setting determines how long the scanner waits after a transmission ends before resuming quick search or Close Call operation. Select your setting, then press the scroll control.

Off The scanner resumes immediately when the transmission ends.

1-5 sec The scanner waits the set amount of time after the transmission ends before resuming.

Note: The default setting is **2 sec**.

- **Set Attenuator** This setting controls the attenuator for search operation. Select your setting, then press the scroll control.

Off The attenuator is off.

On Reception is attenuated by about 18 dB.

Note: Turn on this setting if you are near other strong signal sources. Attenuation sometimes helps to reduce interference and desensitization that strong signals create.

- **Search with Scan** This setting controls how search with scan works.

Searching and Storing

-
-
- **Set Lockout** This setting controls whether the system is scanned when its quick key is enabled. Rotate the scroll control to select your setting, then press the scroll control.

Locked - the system is not scanned

Unlocked - the system is scanned

Note: You can also lock or unlock a system by pressing **[Func]**, selecting the system, then pressing **[Func] + L/O**.

- **Set Hold Time** This setting controls how many seconds the scanner scans a system before moving to the next unlocked system. Enter a value from 0-255, then press the scroll control to save the setting.

Notes:

- If you select 0, the scanner stays on the system for a minimal time (only long enough to check current system activity).
- The default setting is 2 seconds for each system.
- For conventional systems, all unlocked channels will be scanned at least once regardless of this setting.
- The scanner moves to the next system after the hold time expires, any current transmission ends, and the channel delay time expires.

Auto Search and Store

Your scanner's Auto Store feature lets you search for new frequencies in custom search ranges or within a service search range on a conventional system, or new talk group ID's on a trunked system.

Searching and Storing

Selecting a System

To store frequencies or talk group ID's you find during Auto Store, you must first select a system where the frequencies or talk group ID's will be stored.

Menu → ↺ Search for ... → ↓

↺ Search and Store ↓

↺ Select the system where you want to store the frequencies or talk group IDs → ↓

If no systems are programmed, **No System Stored** appears. If you have already stored too many systems, **Over Limit** appears.

Storing a Conventional System

You can store frequencies into the system you selected in "Selecting a System". Otherwise, the scanner stores frequencies in a new group it creates.

1. Follow Steps 1-3 under "Selecting a System" on Page 100. A search option appears.
2. Turn the scroll control until the type of search you want appears, then press the scroll control to select it. A search band appears.

If all systems are locked out, **All Locked!** appears and the scanner does not store any frequencies.

When you select a search range, the scanner looks for active frequencies within that range and **SEARCH AND STORE** appears on the display's lower line and the system name and search range name appear on the display's upper line. When the scanner finds an active transmission, it checks to see if the frequency has already been stored in the system. If the frequency has already been stored, the scanner continues to search. If the frequency has not been stored, it stores the frequency into a group named **Found Channels**,

Searching and Storing

then resumes searching. The scanner creates this group if it doesn't already exist.

Storing a Trunked System

You can store talk group ID's into the system you selected in "Selecting a System". Otherwise, the scanner stores talk group ID's in a new group it creates.

Note: Trunked system search and store does not work if an EDACS SCAT system is selected, a system with no frequency is selected, the selected system is locked out or the quick key to which the system belongs is turned off, and the group you selected to store found talk group ID's contains more talk group ID's than the maximum set in Max Auto Store.

To store a trunked system, follow Steps 1-3 under "Selecting a System" on Page 100. The scanner enters ID Search and Store mode.

If all systems are locked out, `All Locked!` appears and the scanner does not store any frequencies.

When you select a search range, the scanner looks for active talk group ID's within that range and `ID SEARCH AND STORE` appears on the display's lower line and the system name and search range name appear on the display's upper line. When the scanner finds an active talk group ID, it checks if the talk group ID has already been stored in the system. If it has, the scanner continues to search. If the talk group ID has not been stored, it stores the talk group ID into a group named `Found Channels`, then resumes searching. The scanner creates this group if it does not already exist.

Optimizing P25 Performance

You can optimize the scanner's performance with digital APCO 25 systems. Follow these steps for each system where you can hear APCO 25 traffic.



Notes:

- These steps work only when you can clearly receive the system. If you are in a weak-signal area or receive interference, these steps will not work. These steps do not compensate for weak signals or signals subject to interference.
 - If you set an incorrect decode threshold level in Step 5, the scanner might stop decoding all digital signals in the system. If this happens, change the setting to a value between 8 and 12 then repeat these steps.
1. Make sure the system's P25 Level option is set to `Auto` (see "Adjusting the P25 Level (Motorola and Conventional Systems Only)" on Page 81).
 2. Hold on an active digital channel on the system.
 3. While holding down `[Func]`, briefly press the scroll control twice. The next to last line on the display now shows the digital error rate and the AUTO decode threshold start level (0-20). The last line on the display shows the decode threshold levels for the system.
 4. Allow the scanner to monitor channel activity for several minutes. The error rate should drop for each transmission and the threshold levels should automatically adjust to a more optimal setting. Then, once the threshold level settles to a stable setting, make a note of the values. This is the system's optimum decode threshold.
 5. While holding down `[Func]`, rotate the scroll control to set the AUTO decode threshold start level to a setting that most closely matches the system's optimum decode threshold. Now, when the scanner stops on a system, it will use this threshold as the starting point for automatic optimization.
 6. While holding down `[Func]`, briefly press the scroll control to exit this mode.

Optimizing P25 Performance

Using the Close Call Feature

Your scanner's Close Call™ feature lets you set the scanner so it detects, displays the frequency of, and lets you hear a nearby strong radio transmission. You can set the scanner so the Close Call feature works "in the background" while you are scanning other frequencies, turn off normal scanning while the Close Call feature is working, or turn off the Close Call feature and use the scanner normally. You can set the scanner so it alerts you when the Close Call feature finds a frequency. You can also set the frequency band where you want the scanner to look for transmissions.

To turn Close Call detection on or off, press **[Func]** then . When the feature is on,  appears on the display and normal operation is briefly interrupted about every 2 seconds.

Notes:

- The Close Call feature works well for locating the source of strong local transmissions such as mobile and handheld two-way radios in areas with no other strong transmission sources. Several factors affect Close Call performance, however. Performance is increased with higher transmit power, receive antenna tuned to the target band, and a low background RF level. Other than the antenna, you have no control over these factors, but they explain why performance might vary by both location and time.
- The Close Call feature cannot detect satellite dishes or any transmitter with a frequency above or below the frequency ranges listed under the **Set CC Bands**: option on Page 103.
- The Close Call feature works better with some types of transmissions than others. It might not correctly display frequency information for transmitters using a highly directional antenna (such as an amateur radio beam antenna) or if there are many transmitters operating at the same time in the same area.

Using the Close Call Feature

Setting Close Call Options

Menu → ↺ Close Call → ↓

Select your setting, then press the scroll control.
Then turn the scroll control to select an option.

- **Close Call Only:** Lets you set the scanner only for Close Call searching. The scanner does not scan frequencies or channels when this option is turned on. To select this option, press **E**.
- **CC Auto Store:** Lets you select whether the scanner automatically stores Close Call hits into channels. If you turn this option on, the scanner starts Close Call mode and stores any Close Call hits, up to the maximum you specified in the Max Auto Store setting. If the scanner stores more hits than this setting, it stops Autostore operation.

Turn the scroll control to display an option, then press the scroll control.

- **Set CC Mode:** Lets you select the Close Call mode. If you turn this option on, the scanner sets itself to its Close Call settings about once every 2 seconds.

Turn the scroll control to display an option, then press the scroll control.

You can also toggle this setting by pressing

Func then ↻

- **Set CC Override:** Lets you select how the Close Call feature works with other scanning activities. If you turn this option off, when the scanner detects a Close Call signal, **CC Found!** and **"E" to listen** appear for the time you set in **Set CC Pause**. Press the scroll control or **E** when this appears to jump to and hold on the frequency.

If this option is turned on, the scanner overrides the current channel and goes to the Close Call

Using the Close Call Feature

hit. The scanner displays CC Found! Press Any Key. When you press a key, the frequency appears.

Turn the scroll control to display an option, then press the scroll control.

- Set CC Alert: Lets you select how the scanner alerts you when it receives a Close Call signal. You can select any of the following options.

Select Mode

- Beep (the scanner beeps when it receives a Close Call signal)
- Light (the backlight turns on when it receives a Close Call signal)
- Beep+Light (the scanner beeps and the backlight turns on when it receives a Close Call signal)
- None (the scanner does not alert)

Select Beep

- Off (the scanner does not beep)
- Alert 1-9 - (the scanner sounds an alert beep to notify you of a Close Call hit. When you select an alert level, the scanner automatically enters the setting of the Alert volume level. You can choose different beep types.)

Set CC Pause: Lets you select how long the scanner waits after a hit before it returns to the previous operation.

- 3/5/10/15/30/45/60 sec.
- Infinite.

Turn the scroll control to display an option, then press the scroll control to select it.

Using the Close Call Feature

-
-
- **Set CC Bands:** Lets you select the Close Call band settings. You can turn the following bands on or off.

VHF Low 1 (25.0000-53.9800 MHz)

VHF Low 2 (54.0000-107.9000 MHz)

Air Band (108.0000 - 136.9750 MHz)

VHF High1 (137.0000-224.9800 MHz)

VHF High2 (225.0000-319.9500 MHz)

UHF (320.0000 - 512.0000 MHz)

800MHz+ (764.0000 - 775.9875 MHz,

794.0000 - 823.9875 MHz,

849.0125 - 868.9875 MHz,

894.0125 - 956.0000 MHz,

1240.000 - 1300.0000 MHz)

Use the scroll control to select a band, press the scroll control, then use the scroll control to select **On** or **Off** and press the scroll control. Turning off undesired bands speeds up Close Call operation. (The Close Call feature does not work for frequencies greater than 956 MHz.)

Close Call Hits

When the scanner detects a Close Call hit, it alerts you according to the Override and Alert settings in the previous section. While listening to a Close Call hit, you can press **Hold** to hold on the hit frequency, press the scroll control to quickly save the frequency into memory, press **L/O** to lock out the frequency from Close Call and Search operation, or wait for the transmission to end. If you are in Close Call Only or Close Call Override mode, and you do not press any key, the scanner returns to its previous operation after the transmission ends and the set delay time expires.

If you are holding on the frequency, press **Hold** again to resume the previous operation.

Using the Close Call Feature

Search and Close Call Options

The settings in this section affect custom searches, service searches, and Close Call operation.

Managing Locked-Out Frequencies

While searching or during Close Call operation, if you press **L/O** while the scanner is stopped on a frequency, that frequency is locked out of these modes. You can lock out up to 200 frequencies.

Note: Locking out a frequency does not lock out a channel that contains that frequency.

Unlocking All Frequencies

Menu → ↶ → Srch/CloCall Opt ↓
Freq Lockouts ↓
Unlock All → ↓

The scanner prompts you to confirm deletion.
To confirm and delete all locked-out frequencies, press the scroll control. Otherwise, to cancel, press •.

Reviewing Locked Out Frequencies

Menu → ↶ → Srch/CloCall Opt ↓
Freq Lockouts ↓
↶ Rvw Search L/O → ↓

The scanner displays the first locked-out frequency and prompts you to unlock the frequency. Press the scroll control to unlock the frequency. Or, rotate the scroll control or press • to select a different frequency. To exit the review, press **Menu**.

Searching for Subaudible Tones

Menu → ↶ → Srch/CloCall Opt ↓
↶ CTCSS/DCS Search → ↓

This setting controls whether the scanner will search for a subaudible tone when it stops on a transmission during search or Close Call operation.



Search and Close Call Options

Off The scanner does not search for subaudible tones.

On The scanner searches for and displays any subaudible tone found.

Note: This feature does not operate when the scanner is in AM/WFM modulation mode.

Screening Out Broadcast Sources

Menu →  → **Srch/CloCall** Opt ↓
 **Broadcast Screen** → ↓

This setting determines whether the scanner automatically ignores transmissions found during Custom Search, Service Search, or Close Call operation that are on common broadcasts, paging systems, and other annoyance radio sources.

Note: Broadcast screen is not effective during some service searches.

Set All Band On - turns on broadcast screen on each band.

Set All Band Off - turns off broadcast screen on each band.

Set Each Band - lets you set broadcast screen only on specific bands you select. **On** or **Off** appears next to each option. Turn the scroll control to select an option then press the scroll control to change the setting.

- **Pager** - the scanner skips known paging system frequencies.
- **FM** - the scanner skips known FM frequencies.
- **UHF TV** - the scanner skips known UHF TV frequencies.
- **VHF TV** - the scanner skips known VHF TV frequencies.

Search and Close Call Options

-
-
- NOAA WX - the scanner skips known NOAA weather frequencies.
 - Band 1-10 - select the custom band where you want to screen out broadcast sources.

Program Band - lets you program a custom frequency range for broadcast screen. Turn the scroll control to select an option then press the scroll control to change the setting.

- Band 1-10 - select the group where you want to screen out broadcast sources.

Set Lower Limit - turn the scroll control to enter the lower limit of the frequency range, then press the scroll control to set it.

Set Upper Limit - turn the scroll control to enter the upper limit of the frequency range, then press the scroll control to set it.

Finding Repeater Output Frequencies

Menu → ↺ → Srch/CloCall Opt ↓
 ↺ Repeater Find → ↓



This feature sets whether the scanner tries to tune to a repeater output frequency during Custom Search, Quick Search, or Close Call operation when it detects a transmission on a repeater input frequency. Since you can normally only hear one side of a conversation when you listen to an input frequency transmission, turning this feature on can let you hear both sides of the conversation.

On The scanner automatically applies repeater reverse to detected transmissions. If the scanner detects the transmission on the output frequency, it beeps, **Repeater Found** appears, and it remains on the output frequency until transmissions end. If it does not detect a transmission on the output frequency, it remains on the original frequency.

Search and Close Call Options

Off The scanner does not try to find the output frequency.

Setting the Maximum Auto Store Value



Menu →  → Srch/CloCall Opt ↓
 Max Auto Store → ↓

This value sets how many hits the scanner will automatically store when it is in either Search and Store or Close Call Auto Store mode.

Use the number keys to enter a value from 1 - 256, then press the scroll control.

When the scanner reaches the maximum number of hits you set, it stops the auto-store operation.

Setting the Modulation Type

Menu →  → Srch/CloCall Opt ↓
 Set Modulation → ↓

This setting controls the modulation type used for quick search and Close Call operations. Select your setting, then press the scroll control.

Auto Uses the default setting for the current frequency (see the table at the front of the manual)



AM Uses AM (amplitude modulation)

FM Uses FM (frequency modulation)

NFM Uses narrowband FM

WFM Uses wideband FM

Setting Attenuation

Menu →  → Srch/CloCall Opt ↓
 Set Attenuator → ↓

Search and Close Call Options




This setting controls the attenuator for quick search and Close Call operation. Select your setting, then press the scroll control.

Off The attenuator is off.

On Reception is attenuated by about 18 dB.

Note: Turn on this setting if you are near other strong signal sources. Attenuation sometimes helps to reduce interference and desensitization that strong signals create.

Setting Data Skip

Menu →   → Srch/CloCall Opt ↓
 Set Data Skip → ↓

This setting controls how the scanner behaves when it stops on a channel that has a data signal.

On - the scanner stops briefly on the channel, but then immediately resumes scanning automatically. Press **E** to select.

Off - the scanner remains on the channel until the transmission stops. Press the scroll control to select.

Notes:

- If you are trying to test the Close Call feature with a nearby transmitter and you do not talk into the transmitter, the scanner will detect this as data and will skip the frequency when Data Skip is on. Turn the feature off or talk into the transmitter.
- This setting is ignored for AM channels.
- The default setting for this feature is **Off**.

Search and Close Call Options

Setting the Delay Time

Menu → ↺ → Srch/CloCall Opt ↓
↺ Set Delay Time → ↓

This setting determines how long the scanner waits after a transmission ends before resuming quick search or Close Call operation. Select your setting, then press the scroll control.

Off The scanner resumes immediately when the transmission ends.

1-5 sec The scanner waits the set amount of time after the transmission ends before resuming.

Note: The default setting is 2 sec.

Setting the Search Frequency Step

Menu → ↺ → Srch/CloCall Opt ↓
↺ Set Step → ↓

This setting selects the frequency step used for setting the channels. Select your setting, then press the scroll control.

Auto The step is based on the band (see the table at the front of the manual)

5.0 kHz, 6.25kHz, 7.5 kHz, 8.33kHz, 10.0 kHz,
12.5 kHz, 15.0 kHz, 20.0 kHz, 25.0 kHz,
50.0 kHz, 100.0 kHz The scanner uses the
selected step.

Note: The scanner defaults to Auto.

Search and Close Call Options

Using Weather Alert (SAME)

Your scanner has been primarily designed to be a radio scanner. While it incorporates weather alert as one of its features, we strongly recommend that you not use the scanner as your sole means for receiving emergency alerts. Your local electronics retailer carries several weather radios specifically designed for this function.

Your scanner allows you to search for a local NOAA weather broadcast and set it to alert when a SAME weather alert is broadcast on a NOAA channel. You can also program SAME codes into the scanner and set a weather channel as a priority channel.

In the following sections, you can also access the weather menu from Hold mode by holding **[Func]** then pressing **Wx**.

Searching For a Weather Broadcast

[Menu] → ↻ → WX Operation ↓
Weather Scan → ↓

The scanner starts scanning the preprogrammed weather frequencies, and stops on the first signal. If this station is weak, rotate the scroll control to check for other weather broadcasts in your area.

Note: NOAA broadcasts are continuous broadcasts. You will only lose reception if you move out of a coverage area. If the signal is lost, the scanner resumes searching for a weather transmission.

Turning Weather Alert On/Off

In weather alert mode, your scanner functions as a severe weather warning radio. This is especially useful when your area is expecting severe weather conditions late at night. When you set the scanner to weather alert mode, it holds on the weather channel, but does not play the channel's audio. If it detects a weather alert, it sounds a tone, displays information

about the weather alert, and turns on the audio so you can hear the weather broadcast.

Menu → ⤵ → WX Operation ↓
⤵ Weather Alert → ↓

This setting determines which types of signals will trigger an alert. Select your setting, then press the scroll control.

Alert Only - the scanner alerts when it detects the 1050 Hz tone that accompanies all weather alerts.

All FIPS - the scanner alerts and displays information about the weather alert when it receives any FIPS code (see “Programming a SAME Group” on Page 114).

SAME 1-5 - the scanner alerts and displays information about the weather alert when it receives a weather alert signal that includes any FIPS code you have programmed into the specified SAME group.

Programming a SAME Group

You can edit any of the 5 SAME groups in your scanner. Each group can have up to 8 FIPS codes.

SAME (Specific Area Messaging System) is a system developed by the National Weather Service to reduce the number of alerts received by consumers by allowing them to hear alerts only for the county(ies) they are interested in. Each alert contains information about the type and severity of the alert, as well as the specific geographic locations affected by the alert.

The geographic locations are designated using FIPS codes. Each county or parish in the US and its territories are assigned a FIPS code. In addition, certain special regions and wildcard settings can be assigned.

FIPS codes are in the format nSSCCC:

n: A special subcounty designator. For an entire county, use 0.

Using Weather Alert (SAME)

SS: The state code.

CCC: The county code.

For example, Tarrant County in Texas is assigned to FIPS code 048439.

0 indicates the entire county

48 indicates the state of Texas

439 indicates Tarrant County

To get the FIPS code for your county, visit the National Weather Service web site at <http://www.nws.noaa.gov> and search for "FIPS Listing".

Menu → ↻ → WX Operation ↓

↻ Program SAME ↓

Select the SAME group to edit ↓

Edit Name - enter the name you want to assign to the SAME group you selected.

Edit County - select the position you want to store the FIPS code into, then press the scroll control, enter the FIPS code, and press the scroll control again.

Setting WX Alert Priority

Menu → ↻ → WX Operation ↓

↻ WX Alt Priority ↓ ↻

On - the scanner checks the weather channels every 5 seconds for a 1050 Hz weather alert signal. Press the scroll control to select.

Off - the scanner does not check the weather channels. Press the scroll control to select.

Using Weather Alert (SAME)

Using Tone-Out

Fire Tone-Out Introduction

Your scanner can be set to respond to fire tone-outs that use standard two-tone sequential paging, short one-tone paging, and long group tone paging. You can save up to 10 settings. When you select a setting in standby mode, the scanner also monitors for any other setting that uses the same transmit frequency, modulation, and attenuation settings.

You need tone-out setup information from the agency you wish to monitor. Check with your local agency or on-line resources. Uniden America Corporation has no information regarding local tone-out systems.

Setting Tone-Out Standby

Menu → ↺ → Tone-Out for... → ↓
Tone-Out Standby ↓

Turn the scroll control to select the tone-out to monitor. All tone-outs that have the same frequency, modulation, and attenuation setting as the one you select, are also monitored.

In standby mode, the display cycles through all monitored tone-out settings. Regardless of the current display, the scanner always alerts on any received tone-out that matches a stored setting.

If you press HOLD while in standby mode, the scanner temporarily exits the mode and you hear all transmissions on that frequency. No alerts sound, even if a tone-out matches one you have stored. Press HOLD again to return to standby mode.

Setting Up Tone-Out

Menu → ↺ → Tone-Out for ... ↓ Tone-Out
Setup ↓

Scroll to select the tone-out (1 - 10) you want to program, then press **EYES**. Then you can scroll to any of the following settings and press **EYES** to select and modify the selected settings:

Using Weather Alert (SAME)

-
-
- **Edit Name** - Sets the name for the selected tone-out setting.
 - **Set Frequency** — Sets the tone-outs RF frequency parameters.

Edit Frequency — Enter the desired frequency that the scanner should monitor for the tone-out.

Set Modulation — Set the modulation type for the paging signal.

Auto — The scanner uses the default modulation for the frequency band. If the default modulation is AM or WFM, the modulation operates as FM.

FM — The scanner uses FM for the frequency band. This is the default setting.

NFM — The scanner uses NFM modulation.

Set Attenuation — Turn the scroll control to select **On** or **Off**.

- **Set Tone** — Sets the audio tone frequency for the page.

Edit Tone A — Set the audio frequency for Tone A

Edit Tone B — Set the audio frequency for Tone B

Notes:

- For two-tone pages, enter a value for A and B.
- For one-tone pages using short tones of less than 3.75 seconds, enter the tone value for A, and 0 (zero) for B.
- For long-tone pages, such as group pages of more than 3.75 seconds, enter 0 (zero) for A and the tone value for B.

Using Weather Alert (SAME)

-
-
- **Set Delay Time** — Sets the time the scanner remains in monitor mode after the scanner receives a page and the carrier drops.
 - 1-5 seconds: the scanner resumes standby mode after the carrier drops and the selected time expires.
 - Infinite: you must press HOLD after a page to resume standby mode.
 - Off: the scanner resumes standby as soon as the carrier drops after a page.
 - **Set Alert** — Sets the alert the scanner uses when it receives an alert.
 - **Alert 1 - 9, Off** — scroll to select the alert tone pattern, The scanner sounds each alert as you scroll to its numbered value. If you select **Off**, the scanner does not sound an alert.
 - After you select an alert pattern, the scanner prompts for the alert level for a received alert. Level options 1 to 15 sets a fixed audio level independent of the main volume setting. **AUTO** uses the main volume setting for the alerts.

Using Weather Alert (SAME)

Care and Maintenance

General Use

- Turn the scanner off before disconnecting the power.
- If memory is lost, simply reprogram each channel.
- Always press each button firmly until you hear the entry tone for that key entry.

Location

- Do not use the scanner in high-moisture environments such as the kitchen or bathroom.
- Avoid placing the unit in direct sunlight or near heating elements or vents.
- If the scanner receives strong interference or electrical noise, move it or its antenna away from the source of the noise. If possible, a higher elevation might provide better reception.
- Also try changing the height or angle of the antenna.

Cleaning

- Disconnect the power to the unit before cleaning.
- Clean the outside of the scanner with a mild detergent.
- To prevent scratches, do not use abrasive cleaners or solvents. Be careful not to rub the LCD window.
- Do not use excessive amounts of water.

Repairs

Do not attempt any repair. The scanner contains no user serviceable parts. Contact the Uniden Customer Service Center or take it to a qualified repair technician.

Birdies

All radios can receive “birdies” (undesired signals). If your scanner stops during Scan mode and no sound is heard, it might be receiving a birdie. Birdies are internally generated signals inherent in the electronics of the scanner.

Press **L/O** to lock out the channel.

Care and Maintenance

Troubleshooting

If your BCD396T is not performing properly, try these steps.

Problem	Possible Cause	Suggestion
The scanner doesn't work.	The scanner might not be receiving any power.	Make sure the AC adapter is connected to an AC outlet and the scanner.
		If there is a wall switch that controls power to the AC outlet where you connected the AC adapter, make sure it is on.
Improper reception.	The antenna might need to be adjusted.	Check the antenna connection or move or reposition the antenna.
		Move the scanner.
		You might be in a remote area that could require an optional multi-band antenna. Check with your dealer or local electronics store.
Scan won't stop.	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 42.
	The antenna might need to be adjusted.	Check the antenna connection.
	One or more channels might be locked out.	Make sure the channels you want to scan are not locked out.
	The channel's frequency might not be stored in memory.	Make sure the channel's frequency is stored in the scanner's memory.
	The channel might not be active.	Wait for a transmission on the channel.
Scan won't start.	You must press Scan to scan.	Press Scan .

Troubleshooting

Scan won't start. (continued)	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 42.
	One or more channels might be locked out.	Make sure the channels you want to scan are not locked out.
	The antenna might need to be adjusted.	Check the antenna connection.
Weather scan doesn't work.	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 42.
	The antenna might need to be adjusted.	Check the antenna connection.
	There might not be a NOAA weather broadcast in your area.	Move to an area with a NOAA weather broadcast.

If you experience difficulty while in TrunkTracker™ mode, try the following steps.

Problem	Possible Cause	Suggestion
Scanner won't track a trunked system.	The system might not be one your scanner can scan.	Scan another system.
	The data frequency might be missing.	Enter the data frequency.
	The scanner might need to be changed to a Type 1 scanner setup.	Change to a Type 1 scanner setup. Review "Programming Motorola Systems" on Page 63.

Troubleshooting

Scanner won't track a trunked system. (continued)	The system you are trying to scan might be LTR or EDACS.	Set the scanner to scan LTR or EDACS systems. Review "Programming LTR Systems" on Page 70 and "Programming EDACS Systems" on Page 67.
Scanner won't stop scanning a trunked system.	No ID's have been programmed.	Program one or more ID's or use the ID Search mode.
	The ID's you have stored are not active.	Wait for the ID's to become active or scan another system.
Scanner won't acquire the data channel.	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 42.
	The frequency used for the data channel might be missing.	Check your frequency list for the data channel.
Missing replies to conversations.	The scanner might need to be changed to a Type 1 scanner setup.	Change to a Type 1 scanner setup. See "Programming Motorola Systems" on Page 63.
	The fleet map might be incorrect.	Try another preset fleet map or program your own fleet map.
	One or more of the system's frequencies might not be entered.	Make sure all the system's frequencies have been entered.
	The system you are trying to scan might be LTR or EDACS.	Set the scanner to scan LTR or EDACS systems. Review "Programming LTR Systems" on Page 70 and "Programming EDACS Systems" on Page 67.

Troubleshooting

If you still cannot get satisfactory results while using your scanner or if you want additional information, please call or write the Uniden Parts and Service Division. The address and phone number are listed in the Warranty at the end of this manual. If you would like immediate assistance, please call Customer Service at (800) 297-1023.

If you have Internet access, you can visit <http://www.uniden.com> for additional information.

Troubleshooting

Specifications

Certified in accordance with FCC Rules and Regulations Part 15, Subpart C, as of date of manufacture.

Dynamic Allocation Capacity

Systems: 400 max

Groups: 20 per system

Channels: up to 6000 (3000 typical)

Channels per Trunked System: up to 200

Attenuation: 18 dB (nominal), 10 dB (limit)

Frequency Range (MHz):

25.0 - 26.960 Petroleum Prods/Bcst Pickup Band

26.965 - 27.405 Citizens Band Class D

27.410 - 27.995 Business/Forest Prods

72.0 - 75.995 Intersystem and Astronomy

144.0 - 147.995 2 Meter Amateur Band

150.8 - 161.9950 VHF High Band

Above bands in 5 kHz steps

29.7 - 49.990 VHF Low Band

Above band in 10 kHz steps

137.0 - 143.9875 Military Land Mobile

148.0 - 150.7875 Military Land Mobile

162.0 - 173.9875 Federal Government

400.0 - 405.9875 Miscellaneous

406.0 - 419.9875 Federal Land Mobile

420.0 - 449.9875 70 cm Amateur Band

450.0 - 469.9875 UHF Standard Band

470.0 - 512.0 UHF TV Band

764.0 - 775.9875 Public Service Band

Specifications



794.0 - 805.9875 Public Service Band
806.0 - 823.9875 Public Service Band
849.0125 - 868.9875 Public Service Band
894.0125 - 956.0 Public Service Band
Above bands in 12.5 kHz steps
28.0 - 29.680 10 Meter Amateur Band
50.0 - 53.98 6 Meter Amateur Band
216.0 - 224.980 1.25 Meter Amateur Band
Above bands in 20 kHz steps
108.0 - 136.9750 Aircraft
1240.0 - 1300.0 25 cm Amateur Band
Above bands in 25 kHz steps
54.0 - 71.95 VHF TV Broadcast 2-4
76.0 - 87.95 VHF TV Broadcast 5-6
174.0 - 215.95 TV Broadcast 7-13
225.0 - 399.95 UHF Aircraft Band
Above bands in 50 kHz steps
88.0 - 107.90 FM Broadcast
Above band in 100 kHz steps
Operating Temperature:
Normal –20°C to +60°C
Close Call –10°C to +60°C
Scan Rate: 100 channels per second
(conventional mode)
Search Rate: 300 steps per second (5 kHz step only)
Scan Delay: 0-5 seconds

Specifications

Audio Output: 400mW nominal into 24 Ω internal speaker

30 mW nominal into 32 Ω headphone

6 mW nominal into 64 Ω earphone

Power Requirements:

3 AA Alkaline Batteries (4.5V DC),

or 3 AA Rechargeable Ni-MH Batteries (3.6V DC),

or AC Adapter (6 VDC 800mA) (AD-1001)

Antenna: 50 Ω (Impedance)

External Jacks:

Antenna Jack SMA Type

Headphone Jack 3.5mm

DC Power Jack (EIAJ TYPE-2 Center Positive)
5.5mm

Remote Jack 4 Pin Mini

Size: 2.40 in. (W) x 1.22 in. (D) x 5.35 in. (H)

Weight: 0.60 lbs (with batteries installed)

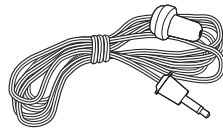
0.40 lbs (without batteries installed)

Features, specifications, and availability of optional accessories are all subject to change without notice.

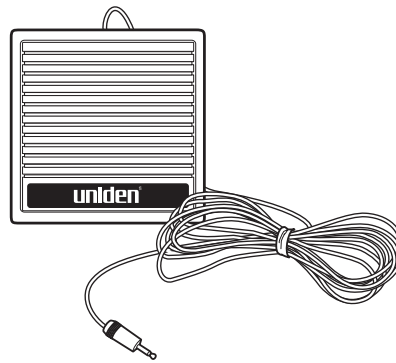
Specifications

Optional Accessories

Contact your local Uniden Dealer or call the Uniden Parts Center at: (800) 554-3988, 8:00AM to 5:00PM EST, Monday through Friday, for information about ordering these optional accessories.



Earphone



External Amplified Speaker

Optional Accessories

Appendix

Preset Fleet Maps

Preset Map 1

Block	Size Code
0	Size Code 11
1	Size Code 11
2	Size Code 11
3	Size Code 11
4	Size Code 11
5	Size Code 11
6	Size Code 11
7	Size Code 11

Preset Map 2

Block	Size Code
0	Size Code 4
1	Size Code 4
2	Size Code 4
3	Size Code 4
4	Size Code 4
5	Size Code 4
6	Size Code 4
7	Size Code 4

Preset Map 3

Block	Size Code
0	Size Code 4
1	Size Code 4
2	Size Code 4
3	Size Code 4
4	Size Code 4
5	Size Code 4
6	Size Code 12
7	(Size Code 12)

Preset Map 4

Block	Size Code
0	Size Code 12
1	(Size Code 12)
2	Size Code 4
3	Size Code 4
4	Size Code 4
5	Size Code 4
6	Size Code 4
7	Size Code 4

Preset Map 5

Block	Size Code
0	Size Code 4
1	Size Code 4
2	Size Code 12
3	(Size Code 12)
4	Size Code 4
5	Size Code 4
6	Size Code 4
7	Size Code 4

Preset Map 6

Block	Size Code
0	Size Code 3
1	Size Code 10
2	Size Code 4
3	Size Code 4
4	Size Code 12
5	(Size Code 12)
6	Size Code 12
7	(Size Code 12)

Preset Map 7

Block	Size Code
0	Size Code 10
1	Size Code 10
2	Size Code 11
3	Size Code 4
4	Size Code 4
5	Size Code 4
6	Size Code 4
7	Size Code 4

Preset Map 8

Block	Size Code
0	Size Code 1
1	Size Code 1
2	Size Code 2
3	Size Code 2
4	Size Code 3
5	Size Code 3
6	Size Code 4
7	Size Code 4

Appendix

Preset Map 9

Block	Size Code
0	Size Code 4
1	Size Code 4
2	Size Code 0
3	Size Code 0
4	Size Code 0
5	Size Code 0
6	Size Code 0
7	Size Code 0

Preset Map 10

Block	Size Code
0	Size Code 0
1	Size Code 0
2	Size Code 0
3	Size Code 0
4	Size Code 0
5	Size Code 0
6	Size Code 4
7	Size Code 4

Preset Map 11

Block	Size Code
0	Size Code 4
1	Size Code 0
2	Size Code 0
3	Size Code 0
4	Size Code 0
5	Size Code 0
6	Size Code 0
7	Size Code 0

Preset Map 12

Block	Size Code
0	Size Code 0
1	Size Code 0
2	Size Code 0
3	Size Code 0
4	Size Code 0
5	Size Code 0
6	Size Code 0
7	Size Code 4

Preset Map 13

Block	Size Code
0	Size Code 3
1	Size Code 3
2	Size Code 11
3	Size Code 4
4	Size Code 4
5	Size Code 0
6	Size Code 0
7	Size Code 0

Preset Map 14

Block	Size Code
0	Size Code 4
1	Size Code 3
2	Size Code 10
3	Size Code 4
4	Size Code 4
5	Size Code 4
6	Size Code 12
7	(Size Code 12)

Preset Map 15

Block	Size Code
0	Size Code 4
1	Size Code 4
2	Size Code 4
3	Size Code 11
4	Size Code 11
5	Size Code 0
6	Size Code 12
7	(Size Code 12)

Preset Map 16

Block	Size Code
0	Size Code 3
1	Size Code 10
2	Size Code 10
3	Size Code 11
4	Size Code 0
5	Size Code 0
6	Size Code 12
7	(Size Code 12)

Appendix

User Defined Fleet Maps

Type I Programming Information

When a Type I system is designed, the address information for all the ID's is divided into 8 equal sized blocks, numbered 0–7. When you program your scanner to track a Type I system, you must select a size code for each of these blocks. When you have assigned a size code to all 8 blocks, you'll have defined the fleet map for the system you are tracking. Each size code determines the number of fleets, subfleets, and ID's each block will have. For example, a size code of S-4 has one fleet, which is divided into 16 separate subfleets, and it has a total of 512 individual ID's.

When a block is assigned a size code, the fleet or fleets created within the block are assigned a Type I ID. The way these ID's display on your scanner depend on the block number and the block's size code. When a Type I ID appears, the leftmost digit represents the block which contains the ID.

The next 2-3 digits identify which fleet is active, and the last digit(s) identifies the subfleet.

The details concerning how the size codes are selected by a Type I System designer are highly dependent on the specific needs of the system's users. Some organizations might want many subfleets with only a few radios each, while another organization might want only a few subfleets with many radios each. Your task is to program your fleet map with the same size code assignments as the trunked system. If you do this accurately, you'll track all the Fleet-Subfleet combinations used by the system. In other words, you'll hear complete communications while monitoring a trunked system.

If you don't already know the size codes used, you'll have to guess at them. But since you don't have to figure out all the blocks at once, this isn't as hard as it

Appendix

seems. Select a size code for a block, and then press **Scan**. Now listen to the communications. If you decide you are receiving most of the replies to the conversations with ID's assigned to the block you just programmed, then you've probably selected the right size code and can work on the next block of the map.

Finally, for most public safety systems there are some size codes which are more common. S-3 and S-4 are probably the most common, followed by S-10, S-11, and S-12.

Size Code Restrictions

If you select size code S-12, S-13, or S-14, there are some restrictions as to which blocks can be used for these codes.

S-12 can only be assigned to Blocks 0, 2, 4, or 6.

S-13 can only be assigned to Blocks 0 and 4.

S-14 can only be assigned to Block 0.

Since these size codes require multiple blocks, you will be prompted for the next available block when programming a fleet map. For example, if you assign Block 0 as an S-12, you will be prompted for b2, the next block available, instead of b1. And if you assign Block 0 as an S-14, you would not see another prompt because it uses all available blocks.

Appendix

Planning

Collecting Information

Getting your scanner programmed and scanning takes a few steps. This helps guide you through these steps that will make it easier for you to start scanning.

1. Collect information about the system(s) you want to monitor.

Do you want to listen to your local police and fire departments? How about the highway patrol, ambulance service, and aircraft? You might even want to listen to your local utility company as they track down a break in electrical service in your area.

Make a list of the agencies you want to listen to, then look up the frequencies and systems used by those agencies. The Internet is a great source for current frequencies and information about scanning. Here are a few useful sites:

- <http://www.scannermaster.com/> - frequency resources and home of Police Call.

You can also call them at 1 800 SCANNER (hours are from 10:00 a.m. to 5:00 p.m. Eastern Time Monday through Friday.)
- <http://www.radioreference.com/> - the Internet's premier source for user-supported radio system information.
- <http://www.bearcat1.com/> - frequency information from National Communications.
- <http://svartifoss2.fcc.gov/reports/index.cfm> - conventional frequency information on file with the US Government

Tips:

- Scanners are designed to monitor complex radio systems. That means that programming your scanner might seem like a daunting task at first. Be patient if you don't get it right the first time. You can also seek out help locally for the systems you

want to scan by visiting the forums section of <http://www.radioreference.com/forums>.

- Before you start to program your scanner, decide how you want to organize the frequencies you want to scan. For example, some areas are best organized by geographic location (east, north, south, west, central, etc), while others are best organized by agency (police, sheriff, ambulance, fire, etc.). You might even find it easier to organize a mixture of frequencies (north, southeast, and west for police but fire all in one group for example).
2. Organize the system information using these system worksheets included in this appendix.
 - Use “Conventional System Worksheet” on Page 139 to organize info about conventional frequencies.
 - Use “Motorola System Worksheet” on Page 140 to organize information about Motorola frequencies.
 - Use “LTR/EDACS System Worksheet” on Page 138 to organize information about LTR and EDACS frequencies.
 3. Follow the instructions in “Filling Out The Conventional System Worksheet” on Page 135, “Filling Out The Motorola Worksheet” on Page 135, and “Filling Out the LTR and EDACS Worksheet” on Page 137 to program your scanner.

Tips:

- Before you start, make as many copies of the worksheets as you think you'll need. You can also go to the download section of <http://www.uniden.com/productsupport.cfm> and download the worksheets there.
- All worksheet instructions assume that you have completed the critical Step 1 (collecting the system information). Don't skip this step.
- Use a pencil to fill out the worksheets. This lets you change information if necessary.

Planning

Filling Out The Conventional System Worksheet

System Name and Quick Key

Fill in a name that describes the system you want to create. For example, you can enter "Dallas Police" or "Amateur Radio" here. If you want to store more than one type of frequency, you can enter "Mixed."

Fill in the key you want to press to quickly activate/deactivate the system. You can assign the same quick key to multiple systems.

Group Name and Quick Key

Each worksheet documents the settings for one channel group within a system. If you have fewer channels in the group than fits on the page, you can skip a line and enter an additional group of channels (enter the group info in the line you skipped). If you have more channels for the group than will fit on the page, use additional pages.

Fill in the key you want to press with **Func** to quickly activate/deactivate the channel group. You can assign the same quick key to multiple groups within a system.

Frequency-Alpha Tag-Priority-CTCSS/DCS

Fill in the details for each channel you want to store in this channel group.

Filling Out The Motorola Worksheet

System Name and Quick Key

Fill in a name that describes the system you want to create. For example, you can enter "Dallas Police" or "Amateur Radio" here. If you want to store more than one type of frequency, you can enter "Mixed."

Planning

Fill in the key you want to press to quickly activate/deactivate the system. You can assign the same quick key to multiple systems.

System Type

Circle in the type of Motorola system you are scanning.

- Type 1. A fleet map is supplied for this type of system.
- Type 2 800 MHz Standard. Used for most 800 MHz systems. No fleet map is supplied for this type of system.
- Type 2 800 MHz Splinter. Used for some 800 MHz systems near border areas.
- Type 2 900 MHz. The supplied frequencies are between 935.0125 MHz and 939.9875 MHz. No fleet map is supplied for this type of system.
- Type 2 UHF. The supplied frequencies are between 406 Hz and 512 MHz. No fleet map is supplied for this type of system.
- Type 2 VHF. The supplied frequencies are between 136 MHz and 174 MHz. No fleet map is supplied for this type of system.
- P25. No fleet map is supplied for this type of system.

System Frequencies

Enter the frequencies used by the system. Motorola systems can use up to 28 frequencies. Place an asterisk or other mark next to frequencies identified as data channels.

Fleet Map (Type I or Type I/Type II Hybrid Only)

Fill in the fleet map used by this agency.

Planning

Band Plan (VHF or UHF Only)

A band plan is required so the scanner can correctly determine the voice channel frequency. Fill in the band plan used by this agency, consisting of:

- Base frequency
- Step frequency
- Channel offset

You can enter up to three band plans.

Group Name and Quick Key

Each "Motorola System Worksheet 2" documents the settings for one channel group within a system. If you have fewer channels in the group than fits on the page, you can skip a line and enter an additional group of channels (enter the group information in the line you skipped). If you have more channels for the group than will fit on the page, use additional pages.

Fill in the key you want to press with **[Func]** to quickly activate/deactivate the channel group. You can assign the same quick key to multiple groups within a system.

Talk Group ID-Alpha Tag-Alert

Fill in the details for each channel you want to store in this channel group.

Filling Out the LTR and EDACS Worksheet

System Name and Quick Key

Fill in a name that describes the system you want to create. For example, you can enter "Dallas Police" or "Amateur Radio" here. If you want to store more than one type of frequency, you can enter "Mixed."

Fill in the key you want to press to quickly activate/deactivate the system. You can assign the same quick key to multiple systems.

System Frequencies and LCN

Fill in each system frequency and its associated Logical Channel Number (LCN).

Group Name and Quick Key

Each “LTR/EDACS System Worksheet 2” documents the settings for one channel group within a system. If you have fewer channels in the group than fits on the page, you can skip a line and enter an additional group of channels (enter the group information in the line you skipped). If you have more channels for the group than will fit on the page, use additional pages.

Fill in the key you want to press with **Func** to quickly activate/deactivate the channel group. You can assign the same quick key to multiple groups within a system.

Talk Group ID-Alpha Tag-Alert

Fill in the details for each channel you want to store in this channel group.

[illegible]

Motorola System Worksheet

Motorola System Worksheet

Motorola System Worksheet 1			
System Name			
System Quick Key			
System Frequencies	Type I		
	Type II 800 MHz:		
	Standard		
	Splinter		
	Type II UHF		
	Type II VHF		
	P25		
	Fleet Map		
	Block 0		
	Block 1		
	Block 2		
	Block 3		
	Block 4		
	Block 5		
	Block 6		
	Block 7		
	Band Plan A		
	Base Frequency		
	Step Frequency		
	Offset		
	Band Plan B		
	Base Frequency		
	Step Frequency		
	Offset		
	Band Plan C		
	Base Frequency		
	Step Frequency		
	Offset		

Planning

LTR/EDACS System Worksheet

[illegible]

Planning

[illegible]

143

Preprogrammed Systems

Your scanner is preprogrammed with over 400 channels covering police, fire, and ambulance operations in the 25 most populated counties in the US. The following list details the preprogrammed information.

By default, all of the preprogrammed systems are unlocked, and your scanner begins to scan them when you turn it on. To speed up scanning, you can lock out systems that are beyond your reception area (typically no more than 25 miles using the supplied antenna).

Follow these steps to lock out systems.

1. Press and hold **[Func]**.
2. While continuing to hold **[Func]**, rotate the scroll control to select a system you want to lock out.
3. While continuing to hold **[Func]**, press **L/O** to lock out the system.
4. Repeat Steps 2, 3, and 4 to lock out additional systems.

The preprogrammed systems provide a starting point; you will want to find out more information about your local radio systems so you can customize the programming to better suit your listening preferences.

Notes:

- The list is subject to change.
- You might hear transmissions on frequencies assigned to very distant stations. This will happen if a local system also uses the same frequency. Disregard the text tag for these transmissions (e.g. if you are in California, you aren't really receiving Florida transmissions even if the scanner displays Dade County).
- To free up memory, you can delete systems that you will not be monitoring. Refer to "Deleting Systems" on Page 83.
- Data used for the preprogrammed information was supplied courtesy of <http://www.radioreference.com>, the Internet's premier scanning resource (RadioReference is not affiliated with Uniden America Corporation).

Preprogrammed Systems

Table 1:

State	Area	System	Quick Key
--	Nationwide	Nationwide	20
AK	All	Alaska	21
AZ	Phoenix	Chandler MOT	22
AZ	Phoenix	Maricopa Conv	22
AZ	Phoenix	Phoenix-Mesa	22
AZ	Phoenix	Tempe MOT	22
AZ	Tucson	Marana	23
AZ	Tucson	Tucson	23
CA	Alameda	Alameda Conv	24
CA	Alameda	Alameda MOT	24
CA	Los Angeles	Culver City MOT	25
CA	Los Angeles	Glendale	25
CA	Los Angeles	Los Angeles Conv	25
CA	Los Angeles	Orange MOT	25
CA	Los Angeles	Palm Springs MOT	25
CA	Los Angeles	Riverside Conv	25
CA	Los Angeles	SanBernadinoA MOT	25
CA	Los Angeles	SanBernadinoB MOT	25
CA	Los Angeles	SanBernadinoC MOT	25
CA	Los Angeles	SanBernadinoD MOT	25
CA	Los Angeles	SanBernadinoE MOT	25
CA	Los Angeles	Signal Hill MOT	25
CA	Los Angeles	Torrance County	25
CA	San Diego	NationalCity MOT	26
CA	San Diego	San Diego Conv	26
CA	San Diego	San Diego MOT	26
CA	San Diego	SanDiegoCity MOT	26
CA	San Francisco	Oakland EDACS	27
CA	San Francisco	Santa Clara Conv	27
CA	San Francisco	Santa Clara MOT	27
CO	Statewide	Colorado	28
FL	Miami	Broward Cnty MOT	29
FL	Miami	Broward Conv	29

Preprogrammed Systems

Table 1:

State	Area	System	Quick Key
FL	Miami	Coral SpringsMOT	29
FL	Miami	Dade Conv	29
FL	Miami	Dade EDACS	29
FL	Miami	Dade Fire EDACS	29
FL	Miami	Ft.LauderdaleMOT	29
FL	Miami	Miami Beach MOT	29
FL	Miami	Miami MOT	29
FL	Miami	Plantation MOT	29
GA	Atlanta	Atlanta	30
GA	Atlanta	Cherokee County	30
GA	Atlanta	DeKalb County	30
GA	Atlanta	Fayette County	30
GA	Atlanta	Forsyth County	30
GA	Atlanta	Forsyth	30
GA	Atlanta	Fulton County	30
GA	Atlanta	Gwinnett County	30
GA	Atlanta	Rockdale County	30
GA	Houston County	Houston County	31
IL	Chicago	Chicago Area	32
IL	Chicago	Cook Conv	32
IL	Chicago	NW Central MOT	32
IL	Chicago	Schaumburg MOT	32
IL	St. Louis	St Clair County	33
MA	Boston	Boston Area	34
MA	Boston	Cambridge	34
MA	Boston	Marshfield	34
MA	Boston	Middlesex Conv	34
MA	Statewide	MA State Police	35
MI	Detroit	Wayne Conv	36
MI	Statewide	Michigan MPSCS	37
MN	Statewide	Minn ARMER	38
MT	Statewide	Montana	39
NC	Charlotte	Cabarrus County	40
NC	Charlotte	Charlotte Area	40

Preprogrammed Systems

Table 1:

State	Area	System	Quick Key
NC	Charlotte	Charltte_Mckinbg	40
NE	Omaha	DouglasCounty	41
NJ	Newark	East Brunswick	42
NJ	Newark	East Hampton MOT	42
NJ	Newark	Edison	42
NJ	Newark	Monroe	42
NJ	Newark	Old Bridge	42
NJ	Newark	Piscataway	42
NJ	Newark	Sayreville	42
NJ	Newark	Union City	42
NM	Albuquerque	BernalilloCounty	43
NM	Albuquerque	LosAlamos County	43
NM	Albuquerque	Sandoval County	43
NM	Albuquerque	Valencia County	43
NM	Santa Fe	Santa Fe City	44
NM	Santa Fe	Santa Fe County	44
NV	Las Vegas	Clark County MOT	59
NY	New York City	East Fishkill L	45
NY	New York City	New York Conv	45
NY	New York City	NY Area Conv	45
NY	New York City	SuffolkCountyMOT	45
OH	Cincinnati	Brook Park MOT	46
OH	Cincinnati	Butler County	46
OH	Cincinnati	Cincinnati Area	46
OH	Cincinnati	Clermont CntyTRS	46
OH	Cincinnati	Clermont County	46
OH	Cincinnati	Hamilton CntyTRS	46
OH	Cincinnati	Warren Cnty TRS	46
OH	Cincinnati	Warren County	46
OH	Cincinnati	West Chester TRS	46
OH	Cleveland	Cuyahoga Conv	47
OH	Cleveland	Parma EDACS	47
OH	Statewide	Ohio MARCS	48
PA	Philadelphia	PhiladelphiaConv	49

Preprogrammed Systems

Table 1:

State	Area	System	Quick Key
PA	Westmoreland	Westmoreland	50
TX	Austin	Austin	51
TX	Austin	Bastrop County	51
TX	Austin	Hays County	51
TX	Austin	LCRA Austin	51
TX	Austin	LCRA Bastrop	51
TX	Austin	LCRA BlancoNorth	51
TX	Austin	LCRA BlancoSouth	51
TX	Austin	LCRA Boerne	51
TX	Austin	LCRA Brenham	51
TX	Austin	LCRA ComalCounty	51
TX	Austin	LCRA Creedmoor	51
TX	Austin	LCRA Doss	51
TX	Austin	LCRA Elgin	51
TX	Austin	LCRA Flatonia	51
TX	Austin	LCRA Gonzales	51
TX	Austin	LCRA Haletsville	51
TX	Austin	LCRA Kendall	51
TX	Austin	LCRA Kerrville	51
TX	Austin	LCRA Kingsbury	51
TX	Austin	LCRA Lago Vista	51
TX	Austin	LCRA Llano	51
TX	Austin	LCRA New Tatian	51
TX	Austin	LCRA Peters	51
TX	Austin	LCRA Rutersville	51
TX	Austin	LCRA San Marcos	51
TX	Austin	LCRA Seward Jnct	51
TX	Austin	LCRA Washington	51
TX	Austin	LCRAAustin_Dobie	51
TX	Austin	LCRACouncilCreek	51
TX	Austin	LCRA Fredericksbg	51
TX	Austin	LCRA NewBraunfels	51
TX	Austin	Travis County	51
TX	Austin	Williamson Cnty	51

Preprogrammed Systems

Table 1:

State	Area	System	Quick Key
TX	Austin	WilliamsonCounty	51
TX	Dallas-Fort Worth	Arlington MOT	52
TX	Dallas-Fort Worth	Carrollton MOT	52
TX	Dallas-Fort Worth	Dallas Conv	52
TX	Dallas-Fort Worth	Dallas MOT	52
TX	Dallas-Fort Worth	Fort Worth MOT	52
TX	Dallas-Fort Worth	Garland MOT	52
TX	Dallas-Fort Worth	GrandPrairie MOT	52
TX	Dallas-Fort Worth	Irving EDACS	52
TX	Dallas-Fort Worth	Lewisville MOT	52
TX	Dallas-Fort Worth	Mesquite MOT	52
TX	Dallas-Fort Worth	NE Tarrant MOT	52
TX	Dallas-Fort Worth	Richardson EDACS	52
TX	Dallas-Fort Worth	Tarrant Conv	52
TX	Houston	Caldwell County	53
TX	Houston	Harris Conv	53
TX	Houston	Luling	53
TX	San Antonio	Bexar Conv	54
TX	South Texas	STARNET MOT	55
VA	Statewide	Virginia	56
WA	Seattle	PortOfSeattleMOT	57
WA	Seattle	Seattle MOT	57
WV	Harrison	Harrison	58

One-Year Limited Warranty

Important: Evidence of original purchase is required for warranty service.

WARRANTOR: UNIDEN AMERICA CORPORATION ("Uniden")

ELEMENTS OF WARRANTY: Uniden warrants, for one year, to the original retail owner, this Uniden Product to be free from defects in materials and craftsmanship with only the limitations or exclusions set out below.

WARRANTY DURATION: This warranty to the original user shall terminate and be of no further effect 12 months after the date of original retail sale. The warranty is invalid if the Product is (A) damaged or not maintained as reasonable or necessary, (B) modified, altered, or used as part of any conversion kits, subassemblies, or any configurations not sold by Uniden, (C) improperly installed, (D) serviced or repaired by someone other than an authorized Uniden service center for a defect or malfunction covered by this warranty, (E) used in any conjunction with equipment or parts or as part of any system not manufactured by Uniden, or (F) installed or programmed by anyone other than as detailed by the Operating Guide for this product.

STATEMENT OF REMEDY: In the event that the product does not conform to this warranty at any time while this warranty is in effect, warrantor will repair the defect and return it to you without charge for parts, service, or any other cost (except shipping and handling) incurred by warrantor or its representatives in connection with the performance of this warranty. THE LIMITED WARRANTY SET FORTH ABOVE IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO THE PRODUCT AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES OF ANY NATURE WHATSOEVER, WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR

One-Year Limited Warranty

FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow this exclusion or limitation of incidental or consequential damages so the above limitation or exclusion might not apply to you.

LEGAL REMEDIES: This warranty gives you specific legal rights, and you might also have other rights which vary from state to state. This warranty is void outside the United States of America.

PROCEDURE FOR OBTAINING PERFORMANCE

OF WARRANTY: If, after following the instructions in this Operating Guide you are certain that the Product is defective, pack the Product carefully (preferably in its original packaging). Include evidence of original purchase and a note describing the defect that has caused you to return it. The Product should be shipped freight prepaid, by traceable means, or delivered, to warrantor at:

Uniden America Corporation

Parts and Service Division

4700 Amon Carter Boulevard

Fort Worth, TX 76155

(800) 297-1023, 8:00 a.m. to 5:00 p.m., Central,
Monday through Friday

One-Year Limited Warranty





FOR
ACCESSORIES,
GO ONLINE &
WWW.UNIDEN.COM

REGISTER ONLINE TODAY!

THANK YOU FOR BUYING A UNIDEN PRODUCT.

A World Without Wires®

Uniden

May be covered under one or more of the following U.S. patents.

4,298,304	4,409,688	4,455,679	4,461,036	4,521,915	4,597,104
4,627,100	4,841,302	4,888,815	4,932,074	4,947,456	5,014,348
5,199,109	5,408,692	5,428,826	5,438,688	5,448,256	5,465,402
5,471,660	5,483,684	5,530,286	5,540,832	5,571,071	5,574,995
5,577,076	5,598,430	5,600,223	5,642,424	5,710,992	5,859,875
5,894,422	5,991,346	5,991,603	6,012,158	6,025,758	6,034,573
6,064,270	6,266,521				

©2005. Uniden America Corporation, Fort Worth, Texas
Contains additional foreign articles. Custom manufactured in
China.
UBZZ013282B